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But ~~it~~ is easy to show, as Professor Robbins has done most clearly¹, that this definition, though not without a large kernel of truth, is too restricted in scope to embrace all the facts, and much less fundamental than appears at first glance. It is not difficult to cite numerous examples of actions which have a definite economic significance, but which have little or no connection with material welfare at all. The same good or service may contribute to material welfare at one time and under one set of circumstances, and not at another under changed conditions.² Whether under any circumstances a good or service has economic significance or not depends simply and solely on whether it commands a price, or to borrow a phrase from Wicksteed, on whether it enters within the possible circle of exchange or not.

Now whether a good or service enters within the possible circle of exchange or not does not always depend on whether it promotes material welfare, but it does depend on whether the good and service in question has influence on human behaviour, and on the relative scarcity of their supply. Of these two qualities, the second cannot be considered in isolation from the first, for goods may be scarce without having any significance for human conduct that can be described as economic, that is to say, they may not serve as means to any human desired end.

All human beings live in an environment in which resources of every kind are strictly limited in relation to the ends or wants to whose realisation they contribute. It is often argued that the enormous multiplication of resources resulting from the application of scientific principles to production has solved the age-old problem of scarcity, but this is true only in a limited sense.

It is true to-day that, thanks to the revolutions in mechanical transport, the fear of famine has been removed;

¹ *Nature and Significance of Economic Science.*

² Page 10.

and also that many commodities which were the luxuries of the affluent classes of society a few generations ago are necessities now in every working-class household. ✓

On a broad view, however, the fundamental problem still remains because, if resources have multiplied, so have ends or wants at an even greater rate, and it is only in relation to wants that resources have meaning. It must also be remembered that resources can only be used in time, and although even time can be economised by mechanical inventions, which is the same thing as saying that it can be made less scarce, yet in relation to the accomplishment of aims, it tends to become relatively scarcer, as with every advance in economic culture, wants multiply so rapidly.

The distinction between relative and absolute scarcity must never be overlooked. That the working man is absolutely, and often relatively, poor, is obvious; but a little reflection will suffice to show that the rich man may often be in no stronger position than the working man from the point of view of wealth in relation to desires, though his absolute wealth is undeniable.

The explanation is that the wants of different classes are on very different levels. A few pounds may be sufficient to satisfy the most pressing wants of the destitute tramp, but thousands of pounds may be required for the single desire of the rich man, and when we carry the argument forward to the State, a single end may involve the expenditure of enormous sums.

Human desires, or ends, then, being practically without limit, resources are always relatively scarce; hence the bringing into relationship of these scarce resources with desires leads to a form of behaviour we call economic activity, and which consists in choosing between alternatives; for if our resources are only sufficient for the attainment of one desired end, certain others must be relinquished.

In all times and places, and in all sets of circumstances, this fundamental problem is ever present. Because resources are scarce, relative to the ends which they serve to accomplish, we must choose incessantly between alternative goods, or between alternative uses of the same service or good, and our choice is determined, partly by the end in view, and partly by our estimate of the value of the loss of some alternative end that otherwise would be realised. Resources used for one purpose are not available for another, and the scarcer the resources are, the more vital the importance of this simple fact.

If the scarcity of resources relative to ends is the first fundamental principle of economics, this distribution of resources, or choice of ends, is the second. It is independent of time and place, and any particular stage of civilisation. The savage did by instinct, developed by experience, what we do by conscious deliberation. In the economic civilisation in which we live, this principle governs the administration of the resources of every national household; of the industrial world as well as the distribution of the public resources of the State; as Wicksteed has so admirably shown.

As we have already noted, this principle is quite independent of poverty and wealth in any absolute sense. It is the nature of the ends only that is variable. The alternatives before the wife of the labouring man may be the desirability of slightly curtailing expenditure on some class of good in order to make possible some addition to the clothing resources of the household; or whether to curtail both to make provision for a weekly visit to the cinema, or an annual seaside holiday. And the rich man is not outside the range of this simple problem: it is only that his wants are pushed farther back in the scale. If he does not have to choose between such alternatives as food and clothing, he has to balance such desires as the extension of his racing establishment or a new yacht, against some

philanthropic purpose the loss of which may be as real to him as the loss of some physical necessity in a working-class household.¹ Once this principle is grasped in its relation to the private household, its continuance in the world of industry and the public services is self-evident.

Human conduct in a particular aspect is determined solely by the fact that resources are scarce relative to desired ends, and in this fact, as Professor Robbins has clearly demonstrated, we have the nature and first principle of Economics.

The argument becomes still stronger if we consider the matter from the point of view of the factors of production. The production of goods requires a combination of such factors as land, labour, and capital, and in a country like England it is beyond dispute that land is scarce relative to the demands for its use. It is true that, at the present time, there are unemployed resources of capital and labour, but that is because under existing circumstances many of our desires and needs cannot be satisfied. The quantity of capital and labour available is insufficient to satisfy every requirement, so that choice between alternative uses is still necessary.

There is a universality in this conception of the nature of the subject that is lacking in such definitions as *Causes of Material Welfare* or the *Science of Wealth*, for under it, rich and poor, the business world and the administrators of the State, are reduced to a common denominator. Economics thus appears as not so much concerned with

¹ This does not mean that rich people always have unsatisfied wants; otherwise automatic saving, the main source of capital accumulation in a modern society, would be impossible. A person's wants are governed mainly by the conventions of the circle in which he moves; hence, while one rich person may have unsatisfied wants, another with a similar income may be saving automatically.

In any case it is true to say that as a person's income increases his wants do likewise; it is therefore very unlikely that a general over-production of wealth will take place in the near future and render the principle of relative scarcity invalid.

theories of the production and distribution of wealth, or of business relations, as with a special aspect of human behaviour. It is obviously true, of course, that all that is implied in the term causes of material welfare, or in the definition science of wealth is included within the scope of the subject-matter; but it is equally true that Economics transcends this narrow boundary. In the words of Wicksteed, "Its laws are the laws of life, and are applicable to fields that have no connection whatever with business, or the production of wealth."¹ The well-known law of Diminishing Returns, for example, as we shall see later, applies to any form of human activity that is the result of co-operate factors, with equal force and in exactly the same way as it does to agriculture or industry, for unless the factors are blended in proper proportions, the product will be less than that yielded by a superior combination.

The nature of Economics as thus conceived has several advantages over the older theories. By reducing certain forms of human behaviour to a unity, its position as a science becomes unassailable. Not only that, but the cloud hanging over the subject since the early nineteenth century, the misgiving that Economics is related to the ignoble side of human nature, is definitely removed. It should be already clear that there is no necessary connection between the choosing of scarce goods with alternative uses as means to the achievement of certain ends, and the hedonistic economic man of the Ricardo-Benthamite circle. If the subject-matter of Economics includes the competitive business world organised for private profit, it includes just as clearly the everyday activities of the private household and the administration of the public resources, whether the nation is organised for peace or for war. Neither household management nor public administration can be condemned on ethical or other grounds as ignoble pursuits for private gain.

¹ *Common Sense of Political Economy.*

4. The Nature of Ends or Wants

We have defined economic activity as consisting in the relating of means to ends. The first term presents no difficulty, but a caution is necessary with respect to the ends. Ends are both quantitative and qualitative. They can be classified from various points of view—moral, non-moral, and immoral; social and anti-social; wise or foolish, and so on.

Now it cannot be emphasised too strongly that Economics is solely concerned with the number of ends, and with their degrees of relative intensity. With the nature of ends it has no direct concern. The fact that some people with limited resources desire a seaside holiday so intensely that they will reduce current expenditure in various ways to obtain the necessary margin is of direct interest to the economist, because it is a fact that conditions behaviour in a particular direction. But it is no part of the economist, as economist, to pass judgment on the wisdom or folly of the end itself. The fact that people react in a particular way simply because resources are scarce relative to ends desired is the sole fact of interest to the economist; whatever verdict other social sciences may pass on the desirability, or otherwise, of these ends, falls outside the scope of the subject. The economist is only concerned with ends as a given fact because whatever be their ultimate nature, good, bad, or indifferent, so long as their means of satisfaction are relatively scarce, their attainment reacts on human conduct in the same way.

This indifference of Economics to the nature of ends cannot be grasped too firmly, because the neglect of it has been the cause of much confusion. Any attempt to push it beyond this position would cause it to transcend the boundaries of its own peculiar province, and to become entangled in questions that properly belong to other spheres of social thought. A foundation as certain as that of

mathematical science would thus be abandoned for one on which it is impossible to build a permanent edifice (as experience has proved). In other words, Economics would be again involved in the controversy between what is, and what should be.

Although Economics, as a pure science, is solely concerned with what is, that is, it builds upon a foundation of facts inherent in human nature, and on others existing in the physical world, its indifference to the nature of ends absolves it from the charge of being a defence of what is. It was a misconception on this point that brought the economics of the Ricardian circle, apart from any question of principle, into undeserved disrepute in the second half of last century.¹ There is no reason to assume, as has often been supposed, that Malthus and Ricardo were less deficient in humanity than their successors after 1870, and it would be as unreasonable to condemn Economics for building on the unpleasant fact that resources are always scarce, relative to desires, as to object to mathematics on the ground that the properties of numbers may not always prove convenient.

5. Economic Facts have a Relative, not an Absolute. Value

Relativity or relative value is a familiar term to-day. Mathematics—at any rate, Euclidean geometry—has always been regarded as an absolute science: the truths of the properties of the triangles, for example, are independent of the prejudices of the observer and the circumstances of time and place. Down to the eighteenth century, the social sciences were conceived in similar terms: systems of law and politics, for instance, were erected on basic facts assumed to be universally true with reference to external conditions.

¹ See *Essay on Ricardo*. Toynbee: *Lectures on the Industrial Revolution*.

The first break in the old tradition was made by Montesquieu who showed that political and legal truths are not absolute, but relative to the peculiar conditions of the particular society in which they developed. He showed, for example, that a form of government, or a law, that was valid in one set of circumstances was inapplicable to other conditions.

Now the principles on which pure economic theory is based are universally true; but, like the political and legal categories of Montesquieu, the facts with which it has to deal (not those on which its principles are based), have a value related to particular conditions.

Only a little reflection is needed to see clearly that the principle of scarcity is purely relative. Just as position in space has no absolute position, but one relative to axes, so scarcity of goods and services has meaning only in relation to certain desired ends. A good or service may be scarce in an absolute sense, and yet redundant the moment it ceases to be related to some desired human end.

The opinion Robinson Crusoe expressed of the gold he found in the captain's cabin is a case in point, and similar examples from experience will readily occur to the reader.

If we return to the other side of the equation any alteration in the valuation of an end may deprive certain means of their scarcity quality. The deplorable condition of many members of former cinema orchestras is a case familiar to all. The point is of capital importance because a change of circumstances which annihilates a given end may render the most expensive apparatus and machinery valueless. The elaborate organisation for the production of munitions of war built up between 1914 and 1918 is perhaps the most spectacular example in modern times, but the principle runs through private, industrial, and public life. A change of circumstances, habits, or fashion may transform into waste, resources previously of great value, and conversely, some change in an end, or the

emergence of a new one, may transform what was previously waste into valuable resources.

The relative value of economic quantities is very marked in the case of goods that admit of substitutes. Coal, considered in itself, has in no way changed with respect to its properties, but the application of oil to purposes of fuel and power has lessened its desirability, and in consequence, its relative scarcity. On the other hand, the continual development of its by-products, or the application of it to the satisfaction of a different set of ends may effect a fundamental transformation of its present position.

Economics, as we have already noted, has no concern with the ultimate nature of ends, but it follows from the above that ends as ends have only a relative value. However absolute the value of an end may appear when considered from the point of view of other social sciences, from the economic point of view its attainment can only be achieved at the expense of the surrender of other ends in an order of society in which resources are limited. You cannot continually expand the Defence Forces, and every branch of the Social Services and at the same time devote to industry the resources necessary for its proper development, in times such as we have experienced during the recent years, without causing far reaching reactions. Curiously enough measures which claim to rest on economic grounds are often advocated with total disregard to the fundamental truths indicated in this and the preceding sections.

In view of the relative nature of economic "quantities"¹ it should be already clear that the old theory of cost of production as an independent, ultimate entity is no longer tenable. Neither from the points of view of painful efforts nor monetary expenses can cost of production exert direct ultimate influence on value, but we shall elucidate this matter fully in a later chapter.

¹ To use the apt term of Professor Robbins.

6. The Distinction between Economic and Social Problems

This distinction should now be clear. By the general public these problems are often confused, and the confusion has given rise to misunderstandings. For theoretical purposes a sharp distinction must be made between the two types of problem. An economic problem is simply one of adjustment of means to ends, whatever the nature of these ends may be. A social problem is mainly one of the nature of ends, and in consequence, it may involve elements that are not economic at all, but political, ethical, or legal. Unless this distinction is kept clearly in mind we are likely to confuse economic with social welfare. When we use the term economic welfare, what we really have in mind is social welfare. In a strictly theoretical sense we can no more speak of economic welfare than of mathematical welfare.

The distinction between an economic and a technical problem may also be noted. A technical problem is a question of achieving a single end in the best possible way irrespective of the effect which the resources so used may have on the fulfilment of other objects.

7. The Method of Economics: Traditional Views

Before defining economic method in a manner consistent with what has already been laid down, a brief account of the development of ideas upon this vexed question will make for clarity of understanding.

The *Wealth of Nations* was a well-balanced book in which both observation and pure reasoning were used with good effect, but the next great advance in Political Economy was made by an economist of a different type. Ricardo was a Jew who had made a fortune on the Stock Exchange; his race and training alike, aided by his own peculiar genius, gave him an insight into the workings of the economic machine he used so effectively. Yet his

genius was narrow; he assumed that mankind consisted of men as keenly devoted to their own money interests as were the financiers around him. He built up a pure science of Political Economy, on the basis of a few underlying assumptions as to human nature; his success in explaining many important problems stimulated the efforts of economists for half a century; he defined the method of English Economy until the days of John Stuart Mill. In the second half century, opposition to the methods of the classical economist grew, and this era was one of disputes between rival schools.

The Ricardian method is said to be "deductive" because it deduces new conclusions from fundamental assumptions or from truths established by other methods. It is "hypothetical" because (whether deliberately or not) certain suppositions are made which do not quite correspond to the actual facts, but which are sufficiently near them to allow of confident reasoning from them as premises. It is "abstract" because the hypothetical conditions are chosen so as to make the problem as simple as possible; the facts may be simplified, irrelevant facts which do not affect the main argument being overlooked; the conditions may be considered as being simpler than they really are, as when economists have considered all men as influenced chiefly by love of money; or a portion of real experience may be isolated for study because it is more easily managed than ordinary business life; thus Ricardo did especially valuable work when dealing with money matters, for the springs of action on the Stock Exchange and other markets are simpler than they are in common life. The method is "analytical" because the process of abstraction is extended, and a complex problem is picked into its component parts, each of them artificially simplified.

The rival method is "inductive" because it accumulates facts, arranges them, and then attempts to draw general

conclusions. It claims to be "realistic" because it describes things as they actually are. It claims to be "concrete" because it deals with the subject as it is, as a whole, and avoids artificial divisions. It is "synthetic" because the subject is not divided into component parts, but the opposite process takes place, and a body of truth is built up from a large number of facts drawn from experience.

The adherents of the purely inductive method (usually known as the Historical School) lay stress on the unsuitability of the use of long chains of deductive reasoning in Economics. They argue that these are too often based on facts or hypotheses which have at most a limited application, and often depend on assumptions as to human conduct which are only partially true. Thus the earlier economists of last century assumed that the love of money was the determining factor in economic life, and it is easy to show that there are many other factors which must be given due weight. Yet adherents of the deductive school can point with pride to the actual and permanent achievements of men like Ricardo; again, they may point out how unlikely it is that an investigator can grind out important general results from the heterogeneous mass of information which the inductive economist must use. This has caused many thinkers to argue that true progress can only be obtained by a wise combination of induction and deduction.

8. Economic Laws

One aspect of the controversy between the rival schools centred round the nature of economic laws. On the theory of Ricardo, certain laws appeared inevitable, yet as the nineteenth century progressed, conditions developed which made Ricardo seem a false prophet and lent support to the claim of the Historical School that exact economic laws are impossible.

There is, however, no fundamental difference between the laws of any of the sciences. (A law is simply a statement of what must happen given certain conditions.) If these conditions are changed the action of the law is suspended, and this is equally true of Economics and Physics. When we say that an economic law has been violated, what we really mean is that the conditions necessary for its action to have effect have been changed.

9. Economic Method Restated

The brief history of the controversy around the methodology of the subject which has been waged during the last hundred years, and which still continues, should enable the reader to detect the confusion of thought involved. It arose, as was explained in the last section, when the Ricardian economics failed to stand the test of experience in certain particulars; hence the German historians swung the pendulum to the opposite extreme and denied the possibility of a science of Economics at all, and argued that the human mind cannot pass beyond the inductions furnished by the study of the development of different economic institutions. The difficulty of formulating any general principle by this method alone led to that combination of induction and deduction which has held the field down to very recent years.

But the errors of the Ricardian school of economists did not spring from the type of method employed, but from the fact that they built upon premises that were unsound. These premises fall into two groups, an over simplified view of human nature, and the peculiar conditions of English industry and agriculture at the beginning of the nineteenth century. With respect to the first, they assumed that self-interest is the universal motive force of human nature, which is obviously untrue; and with respect to the second, they assumed that certain deductions which could rightly

be made from the peculiar conditions of the England of their time, could be universalised independently of the conditions of time and place; at any rate that was the impression they gave to the world.

Errors of this kind, however, do not invalidate deductive reasoning. The modern marginalists are just as deductive as their Ricardian predecessors, but they stand on a very different foundation. That means of satisfaction are scarce in relation to desired ends is a self-evident truth which can be verified by experience. It is true of all times and all places; it is independent of social, political, and ethical systems; the means and the ends may change, but the fundamental relation between them remains constant, though not necessarily in the same degree. Given these ends and means, the scarcity relation between them induces a constant type of behaviour (*i.e.* the choosing between alternative ends with a view to administering limited resources in the most economical manner possible) that is independent of any particular view of human nature, degree of culture, and the nature of the ends themselves. It is equally applicable to wise and foolish, civilised and savage, and saint and sinner. So far as pure principles are concerned, it is possible to erect on this foundation a body of principles that are as certain as those of mathematics.

By virtue of their starting point, the modern deductive school has avoided the pitfalls which obstructed the path of those who attempted to build a science on the causes of material welfare, for they have saved themselves from encroachment on the legitimate domain of either social sciences.

That the deductive method is the appropriate one for the principles of pure Economics can admit of no doubt once the nature of the subject has been grasped, as well as its scope; indeed, as soon as attention is directed to this point, much of the controversy over method becomes meaningless.

It is essential, however, that the clear distinction between hypothesis and reality be kept in mind, because it does not follow that a legitimate deduction from pure theory can be applied without reserve to every specific actual situation.

For this reason alone, pure economic theory, though deductive in method, is not independent of inductive studies or realism. There is a vital difference between pure theory and the application of it to actual situations, and when we turn to current questions, realism has a legitimate and necessary place. A generalisation may have universal validity, but the application of it to any given situation depends on the special conditions governing that situation, and these conditions vary from time to time and place to place. Empirical or realistic studies therefore suggest how or in what form theory should be applied to a particular situation, and with what special modifications. Again, the actual world is essentially dynamic; new situations constantly arise, and old ones are constantly modified by changing conditions. Empirical studies, *i.e.* inductive experience, suggests from time to time new problems for pure theory to attempt a solution.

In a certain sense we have reached a position that appears on the surface to differ but little from the traditional view set out in the last section, but the foundation on which the controversy rested has moved appreciably, and we have defined with much greater precision the true spheres of the deductive and inductive modes of arriving at truth.

10. The Natural Divisions of the Subject

The question of method can be examined from yet another angle, *i.e.* from the point of view of what might be called the general approach to the subject as distinct from the manner of investigation.

/ So long as Economics was conceived in terms of wealth, or causes of material welfare, the natural procedure was to

divide the subject into at least two main divisions: a theory of production and a theory of distribution; indeed, most textbooks still group the matter of the subject into books dealing with production, exchange, distribution, and consumption.¹

This arrangement has many advantages, especially for the elementary student, because by isolating particular aspects of phenomena it makes for simplicity and clarity; but it is not without definite drawbacks from the point of view of scientific method.

In the first place the divisions are artificial, and are calculated to produce in the minds of beginners the misleading notion of independent categories successive in time. This is clearly inaccurate, for none of these divisions are separate in practice; all are involved in most instances of economic activity, for in a modern industrial society where production begins, so does distribution, consumption, and exchange concurrently.¹ One defect of this arrangement is the tendency under it, to isolate in a watertight compartment matters that have a vital connection with every part of the subject. Interest, for example, is not a function of distribution only: it has a vital connection with the whole system of prices under which production takes place. It is a matter of common observation that the character and extent of production is determined largely by changes in the rate of interest.

Value is another case in point: in many textbooks it is considered primarily in connection with exchange, but few parts of the subject can be considered wholly independently of value, although diminishing returns is an exception.

Professor Robbins raises the further objection, among others, that under the traditional arrangement, there is a tendency to admit within the subject of production a good deal of matter that, strictly speaking, is outside the scope

¹ Hobson: *Industrial System*, contains some useful diagrams.

of the subject, technical discussions relating to agriculture and engineering, for example.¹

For all these reasons, there is a growing tendency among economists to approach the matter of the subject from a different angle. For the older divisions of the subject, a theory of production and a theory of distribution, they substitute a study of the subject as a whole, when its various elements are fixed in quantity and so distributed that there is no economic motive for change, and then consider the effects when changes in these elements are introduced.

These divisions are met with under various names, sometimes as static and dynamic theory, but more usually to-day as equilibrium theory, and the theory of variations.²

The superiority of this method of approach, as a means to the solution of intricate problems, over the older method of subject-matter arrangement is undoubted. The economist is enabled to survey a hypothetical system at work as a whole with all disturbing influences removed, and then to measure the effect on the system as a whole of changes in the growth and distribution of population, changes in technical progress, growth of capital, and so on.³ In other words, the economic research worker can thus approach his problems in a manner that admits of comparison with the methods employed by investigators in the fields of natural science.

The marginal theory on which this book is based, and over which so much controversy has been waged, is essentially an equilibrium theory, "a tool of equilibrium

¹ For a more fundamental objection see Robbins: *Nature and Significance of Economic Science*. Cannan deals with the objection from the standpoint of monetary theory in *Economist's Protest—Recent Advances in Monetary Theory*. So does Davenport: *Economics of Enterprise* (see Quantity Theory).

² See Robbins, also Knight: *Risk, Uncertainty and Profit*, Chap. I., IV.

³ A list of these disturbances will be found in Knight: *Risk, Uncertainty and Profit*, p. 147, and Clark: *Essentials of Economic Theory*.

analysis,"¹ and in a state of perfect equilibrium, its propositions are rigidly true. In the actual dynamic world, discrepancies naturally creep in, because even in a competitive world, adjustments can be made only slowly, and with difficulty, under changing conditions, and to-day competition and free movement of resources are impeded in various ways.

This, however, is no valid objection to the theory; indeed, without the equilibrium hypothesis it seems difficult to see how generalisations can be made at all. Economic elements may be constantly diverted from their equilibrium level by external forces, but whenever the spring of these resistances is relaxed, like liquids, they assert the tendency of their nature.²

The concept of the equilibrium state may present some difficulty to the reader, but the hypothesis is quite simple. Imagine a household equipped with a fixed supply of resources for a short period. The problem of changes in supply is thus eliminated. The members of the household are likewise supposed fixed in number, and so are their tastes and desires over the period in question. Under such circumstances this supply of resources would tend to be so distributed and arranged as to afford the maximum possible satisfaction; no change could therefore be made with advantage, so the household economy would be at rest, that is to say, in a state of equilibrium.

A system of relations would have been established between the supply of resources and the needs and desires of the members of the household which must persist so

¹ Robbins: *Introduction to Wicksteed: Common Sense of Political Economy*.

² NOTE.—In a book, of which the general scheme has been already worked out, drastic changes of method are not possible. An ideal arrangement would have been to approach each topic from the point of view of equilibrium analysis, and then to have studied the effect of dynamic variations. As the greater part of the book is restricted to equilibrium analysis it has not been practicable to illustrate many points with facts taken from the concrete world.

long as conditions remain constant. The system would be a natural one as it would be the most desirable arrangement under the given conditions. The details of the system would vary with the relation between the supply of resources and the range of the household's needs, and two households, considered as independent units, could be in a state of equilibrium with different systems of distribution of resources.

A household in a state of equilibrium is easy to conceive, and the hypothesis can be readily extended to the nation as a whole. All that is necessary to the hypothesis is to imagine the country to be self-contained so that changes in external conditions are eliminated. Internally, we must suppose that the supply of resources of every kind is fixed in quantity; that the number of the population does not change, and also that the needs and desires of the people are fixed. Under these assumptions, no resources of any kind, land, capital, or labour, worth employing at all would be unemployed, and further, these resources, like those in the example of the household, would be gradually so distributed as to yield the maximum advantage. The supply of land, for example, would be apportioned between the different competing uses in such a way that no gain could accrue from transferring a unit of land from one use to another, and capital and labour would be distributed in a similar manner.

The equilibrium position would be reached only gradually, and as a result of movements of resources. So long as the position of equilibrium was not attained, certain units of land, labour, and capital could move from one occupation to another with advantage, and it is self-evident that there would be a natural tendency for these movements to take place. Once, however, an equilibrium position was attained, movements of resources would cease so long as external and internal conditions remained constant.

Now the world is not a static world; it is essentially dynamic. But the hypothesis of the static state is less unreal than may appear at first sight. Change is continuous, but it is not uniform; a given period can be divided, therefore, into a number of approximate equilibrium levels. These positions are not, of course, stable; before one is completely attained the conditions change, and the world presses forward to the next. But although the static state is only an approximate description of the real world at certain points of time, it provides a very convenient means of approach to our subject.

Assuming for the moment that static conditions exist, what is the driving force behind that movement of resources which leads to an equilibrium position? To some extent the answer is self-interest. Each person naturally desires to move himself or his resources to advantage. More ultimately, however, the driving force is competition. Now a complete economic theory can be erected on the principle of choice between alternative uses of scarce goods without any assumption of competition, but the supposition that competition exists is a very convenient, and indeed, realistic, hypothesis, for some degree of competition is always likely to persist in the real world.

But the competition assumed in Economic Theory is not the competition we experience in the concrete world. Like the static state, it is hypothetical, and it is based on certain assumptions the limitations of which must be kept clearly in mind.

11. Perfect or Theoretical Competition

Perfect or theoretical competition assumes in the first place an aggregate of economic individuals, men whose feelings and motives are mainly concerned with obtaining the greatest possible satisfactions for themselves. The second assumption is that these men possess perfect knowledge of market conditions, and perfect judgment in

making decisions, so that they always buy in the cheapest and sell in the dearest market.

The third assumption of perfect competition is that of a perfect market. Now in a perfect market there would be no transfer costs of goods from place to place so that uniform prices would be established everywhere. Not only that, but every seller would be in contact with every buyer, and every buyer would be in contact with every seller, for unless this condition were realised, neither competition nor the market could be perfect. Further, for competition to be perfect it must continue so long as any surplus of advantage can be made, and cease immediately all economic gain is eliminated. Perfect competition is not unlimited competition. It has nothing in common with cut-throat competition to drive a rival out of business; it is a rational competition directed solely to economic purposes.

Actual competition falls far below this standard, and it would be more accurately described by the term imperfect competition. There are, of course, many shades of imperfect competition standing between perfect competition on the one hand and pure monopoly on the other. Even where competition is least imperfect, as in the case of a local retail market, it fails to comply with the conditions laid down above.

The assumption of an abstract hypothetical competition as a means of explanation of economic phenomena has been very adversely criticised, but the criticism is harmless so long as the concept of perfect competition is applied only to the hypothetical static state. As has already been noted, the static state is the most convenient line of approach to economic problems. The forces at work behind economic phenomena are too complex for the limited human mind to study them simultaneously; it is necessary therefore to isolate them and to study them separately under artificially simplified conditions. Only

in this way is it possible to obtain a clear understanding of the fundamental principles that govern values and the determination of prices in the actual market.

REFERENCES. Robbins: *Nature and Significance of Economic Science.*

„ Introduction to Wicksteed:
Common Sense of Political Economy.

Toynbee: *Lectures on the Industrial Revolution.*

CHAPTER II

THE THEORY OF WANTS

1. Introduction

Our first step forward involves a more detailed examination of the problems of the adjustment of resources to ends than was possible in the previous chapter. Every individual and group of individuals are alike in the one important respect that they have wants which it is their primary business of life to satisfy. These wants may be related to material well-being; the elementary wants usually are, but many of them are not, and as has already been noted, to restrict economic activities to material welfare or to the mere production of wealth is to define very inaccurately their scope.

2. Needs and Wants

The life-history of a normal human being is the record of a continuous sense of incompleteness. On the animal plane there are numerous half-instinctive feelings which may be called the primary human Needs; such are hunger and thirst. There are other feelings concerned with less vital matters but which are common to man and the higher animals; they may be designated as Wants. As man has progressed, his wants have become less instinctive, and more and more have tended to associate themselves with the consideration of definite realisable objects; wants, felt in relation to particular things, may be called Desires.

A savage group in a thinly-populated region well stocked with food finds little difficulty in satisfying its primary needs, for nature provides the means of satisfaction of the wants essential to existence. Household Economy, the attempt to adapt means to an economic end, has little place in such a group, and Economics finds scanty materials

with which to deal. When, however, there is present a limitation of the goods which can satisfy human needs the concept of property arises, *i.e.* the appropriation by certain persons of goods which are limited in amount. Even before the introduction of money those goods worth appropriating would stand out as objects of peculiar interest; to-day, those goods which can satisfy any human wants, primary or not, and which are limited in amount, are those which possess a money price.✓

COMFORTS.—In a civilised country, the mass of the people is so far removed from hunger that it cannot realise the essential difference between the primary needs and those comforts and luxuries which have appeared as progress has developed; and it is especially to be noticed that from the standpoint of pure Economics such a distinction is not needed. If the primary wants are satisfied, there is no economic distinction between the satisfaction of a desire for a comfort or luxury, and that for an additional supply of a necessary (*i.e.* a commodity which satisfies a primary need). We may, if we please, draw up a scale of relative importance, *e.g.* necessities for existence, necessities for efficiency, conventional necessities, comforts, luxuries, and pure waste, but it by no means follows that this is the order in which these different classes of economic goods will be regarded in the minds of normal civilised men. Thus, from the purely economic standpoint, these classes of goods tend to mingle, and all alike are estimated by the money measure.

FREE GOODS.—Even to-day there are free goods which satisfy man's primary needs, *e.g.* air and the sun's light and warmth. In England, except in uncommonly dry summers, the water supply is ample for all wants, though it does not always exist in the places where it is required. Yet man's attention is not concentrated on these free

goods, because they do not possess a money price.¹ In common speech, a man would not be said to consume these free goods, and in Economics it is not usually necessary to treat of them, because there is no money estimation. When a want is satisfied, the process of satisfaction is known as Consumption, if the using up or the destruction of economic goods is implied. Thus the use of an oxygen cylinder in an experiment is classed as consumption, because the oxygen has a money price; the vitiation of the atmosphere in a crowded room is not so classed, for the air can be replaced without cost.

CONSUMPTION.—The scope of the term "consumption" is wider than that implied in the common meaning. It is held to include not only the quick destruction of wealth of the kind which gives its income of enjoyment at once, but also the stream of satisfactions provided by economic goods whose depreciation is slow; ancient monuments owned as personal property provide an extreme example of this type. Consumption, in fact, does not in itself imply destruction or even depreciation, though such is the almost inevitable end of all wealth. Consumption is not the same as simple destruction, for the essence of the former is that wants shall be satisfied; destruction, however, may be a necessary accompaniment. If food is eaten, it is in a sense destroyed, but a want has been satisfied, and the food has therefore been consumed; if simply left to rot, it is destroyed, and loses its value in respect to the original want; no satisfaction has been given, and therefore no consumption has taken place. Consumption may, however, lead directly to the further production of wealth; coal is consumed in order that a new form of wealth, *e.g.* cloth, shall appear.

¹Or more ultimately, because they are not relatively scarce. An economic good is a scarce good; that is why it commands a price.

Changes in the particular form of wants, and in the form of the corresponding wealth which satisfies the wants have taken place continuously as man has developed, but human consumption is built to-day on the same basis of wants as is found in primitive societies. There is first the necessity for sustenance, but this factor is less important in England than it is in regions of difficulty where life is largely a struggle for bare existence. It is just because the modern Englishman has little fear of absolute starvation that he is able with a freer mind to concentrate attention on those wants which are yet unsatisfied; for he can balance the satisfaction given by a luxury against that given by a superabundant supply of a necessary food. But though the abundance of food and drink is a mark of civilised life to-day; there is no certainty that the basal human needs will never again cause serious concern. War-time economies showed the ordinary man how seriously his normal habits could be interfered with by shortage. ✓

VARIETY OF WANTS IN MODERN LIFE.—Man's relation to food, however, has greatly changed. Man is less animal in his modes of satisfaction, and his desires are no longer satisfied by mere physical satiation; he requires an improvement in the quality of his food, especially in relation to cooking and preparation. This holds good also with regard to the need for shelter, for civilised man requires greater comfort and a more beautiful environment than that provided by a primitive hut. The desire for better clothing has developed at the same time. The curiously persistent desire for ornament has been subject to the same general changes. Above and beyond all this, however, there has been a great development of new classes of wants, *e.g.* the desire for travel for its own sake. The production of forms of wealth capable of meeting the new demands has imparted a richness and variety to

modern life which is perhaps the chief distinction from savagery.

We cannot here discuss the ultimate meaning of the abounding desires of modern life, save to remark that we cannot believe that the increase of wants is an unmixed good. The effect on economic life is less doubtful; in two ways the result has been a marked stimulation of the productive powers of civilised peoples. The demand for new satisfactions has called out the ability and enterprise required to furnish a supply of goods able to assuage the new wants. Again, the fact that man has increased the number of his desires has made it necessary for him (human nature being what it is) to put forward efforts in order that he may create the wealth necessary to satisfy his desires, or else to work to produce other wealth which he can exchange for the economic goods wanted. As man's requirements have broadened, the production of wealth has developed concurrently, and this increase of production may be imputed mainly to the pressure of increasing wants.

3. Characteristics of Wants

Wants are indeed illimitable in number. It is probable that no man is completely contented for any length of time; even when he has no definite strong desires remaining to be satisfied, his wants are potentially capable of development; new conditions may arise which will provide the prospect of new satisfactions. Human contentment is short-lived; the primary needs may be assuaged in such a way as to give intense pleasure, but these needs are recurrent, and must be met at intervals. Even where consumption seems to offer the prospect of an extended pleasure, the first experience of contentment wears off and new wants appear. Sudden riches seem to solve life's troubles, but man adapts himself to new and more pleasurable conditions, and can soon see clearly that there are further wants beyond his immediate contentment.

A British soldier lived a far less happy life in the field than in his own home, but the difference was not so great as the effect of such a sudden plunge into camp life, or, conversely, that of an unexpected leave, might lead us to expect; man can adapt himself to a forced diminution of his habitual satisfactions, as well as to a development of them. It seems that everyday pleasures become half instinctive, and that energy is thus set free for attention to other sources of satisfaction. Thus, even a persistent satisfaction does not represent permanent full contentment; a recurrent need obviously cannot do so. We should not therefore conclude that new forms of wealth do not increase human happiness in the long run; they may raise the general level of contentment, and also form a basis for later satisfactions.

1. SATIABLE.—Wants are unlimited in number, but limited as regards the capacity for satisfaction; indeed, it is the limitation of the satisfying powers of a single good thing that inspires the search after new goods. A child cannot indefinitely derive a continuous satisfaction from eating the most delicious foodstuffs; it is equally true that the higher pleasures may stale by repetition; this question will be dealt with more fully below.

2. ALTERNATIVE.—Wants are to some extent alternative. This is obvious enough in the case of goods which can satisfy wants based on an ultimate necessity. To a poor man the desire for bread may be almost entirely removed by the consumption of potatoes, rice, or other starchy food. The principle involved can be extended almost indefinitely; necessities for efficiency include a considerable variety of foods, but necessities for existence may consist almost exclusively of a single food; bread and meat are as one to a starving man, while a person who must use his full powers must pay due attention to proportion.

Even for a well-nourished man, however, choice may range between wide limits.

When we pass from needs to the less urgent wants, we find that the most divergent classes of goods compete for favour. A man in a state of unsatisfied discontent may be cheered by the prospect of an interesting book, a luxurious meal, an exciting football match, or a day in the country; any one of these experiences will give him a special but definite satisfaction. Again we see the necessity of applying the term "consumption" to the most diverse things provided that, as in this case, a money price may be used to estimate the intensity of desire. The man in question will consider, not the special nature of the different desires, but their intensities, and these he will instinctively compare by the money standard.

3. COMPETITIVE.—A distinction can be drawn between alternative desires, which exist when the same want is satisfiable by more than one commodity, and competitive desires, which may be of very diverse character, but which compete for satisfaction. The first example above quoted (bread and meat) represents alternative goods in the case of the starving man; the last example deals with competitive desires. The existence of alternative (or interchangeable) desires is of great importance in Economics: wherever an economy exists, *i.e.* where there is an attempted adaptation of means to economic ends, there is a continual attempt to replace the desire for any commodity by another desire which shall provide the same or a similar satisfaction at a less expenditure of resources. The Principle of Substitution is the name given to this tendency, and it is abundantly exemplified in all branches of our study.

There is no doubt as to the reality of competitive desires, but a direct attempt to estimate the changes in the character of consumption under different circumstances is met by many difficulties. We may in passing note

Engel's Law, based on careful observation: it states that the less income a family obtains, the greater will be the proportion spent on food.

4. COMPLEMENTARY.—Wants may be complementary, *i.e.* a commodity may provide a satisfaction only when another satisfaction is obtained at the same time; thus a single shoe is practically useless. To some extent the primary needs are alternative, *e.g.* sleep may to a slight degree compensate for hunger; but, broadly speaking, existence can be sustained only when the whole combination of essential needs is properly met. This complex of necessities is woven in with those needs and habitual wants which form one side of a man's everyday existence; the whole combination forms the "standard of life" of the individual concerned. New satisfactions may cause a temporary excitement, but when a man has become used to them, the effect is simply that of a raising of the general level of contentment, just as the influx of water into the sea raises the level of the whole ocean by an infinitesimal amount.

4. Means of Satisfaction

Wants, or ends, however, are not independent entities. Their satisfaction involves reference to means, and as soon as we consider the relating of ends to means, we probe the very heart of our subject.

Relative to ends, means of satisfaction are always scarce; hence the perpetual problem arises of using these limited resources in such ways as to derive the maximum amount of satisfaction from them, and to ensure that when any particular set of resources is exhausted the wants that are satisfied are of greater importance than those neglected.

Goods, however, have alternative uses. The small bag of flour can be used for bread, or a cake, the crust of a pie,

or several kinds of pudding.¹ This fact forces us into the position of constant choice-making, and as resources become relatively more limited, choice-making becomes increasingly important; indeed, once the true nature of the subject is given, Economics may be safely defined as the theory of choice, for the question of devoting a limited supply of resources to this purpose rather than that is the daily problem for the Government, the corporation, and every private individual from the richest to the poorest.

With resources limited, it is obvious that the attainment of one end involves either the total or partial sacrifice of another. This matter has been expounded in another connection, but its importance is such that it may be repeated. It is obvious enough in the case of the ordinary individual, but it is equally true with respect to the ends of the State. Vast as its resources are in an absolute sense, they are yet just as limited in relation to its ends as in the case of the private individual. The degree of relative scarcity is not fixed, of course. It varies with the general prosperity of the country, but when this prosperity is at a low ebb, even the Government can only attain one end at the expense of others. Undue enlargement of expenditure in one direction (whatever the nature of the end may be), may produce awkward reactions at remote points, and in unexpected ways.

The fundamental fact that resources are relatively scarce goods that can be put to alternative purposes is the thread of unity running through the whole range of Economics, for it moves the management of the resources of the household, the industrial business, and the State on to common ground. The purpose of the economic activity

¹ A sum of money can be expended in almost infinite ways, but at this stage it is advisable to keep the monetary aspect in the background, for the fundamental truths of Economics do not depend on a money economy.

differs in each case, but the adjustment of means to ends is made on identical principles, as Wicksteed has shown with admirable clarity.¹

5. Utility

We must now make clear the connection between wants, desires, satisfactions, goods, and a new economic concept, that of Utility. Wants are both psychological and physiological, *i.e.* they are a craving for mental and physical pleasures. Desires are concentrated on a definite object, and thus contain a mental element; such definite objects are usually, but not always, material, and are called goods. Satisfaction is the removal of wants by means of the consumption of the requisite goods and services, and is a mental state. Utility is the measure of the amount of satisfaction, more correctly perhaps, of the intensity of satisfaction. The peculiar difficulty of investigating mental states is obvious, but their measurement opens out still deeper problems. Material things can be counted, because a recognisable unit may be employed. In the measurement of mental states, however, there is the double difficulty that a unit of mental contentment is unrealisable, and also that the mental states which it is desired to measure differ from each other in kind and in quality as well as in quantity. An individual cannot accurately compare the intensity even of his own sensations at different times; the possibility of directly estimating the sensations of another individual is small indeed. Yet Economics must use an external and material standard for this delicate work.

Where Economics cannot rival the exactness of Physics, it seeks an approximation to the truth. Though the economist cannot estimate the amount of satisfaction actually obtained by the consumption of a certain

¹ *Common Sense of Political Economy*, Vol. I.

commodity, he can make a fairly correct surmise as to the relative amount of satisfaction which the particular consumer expects to derive from goods he is about to consume. The economist is aided by the importance of habit and experience. An individual comes to know his habitual sensations, and arranges them in a kind of mental scale; if he is desirous of a satisfaction which necessitates consumption, he balances the expected pleasure against that which the money price of the necessary wealth will give him if he forgoes the consumption of that particular wealth. The economist takes a short cut through this elaborate maze—

A boy is hungry and feels a want; he sees an apple, and desires it; the apple is wealth, for it must be bought, but satisfaction is obtained by its consumption; the boy estimates the amount of satisfaction he would obtain, and balances it against the best other possible method of using the money he must pay for it. If he is in doubt whether to buy the apple or keep the money, it may be assumed that the expected satisfactions from the apple and from the other most attractive purchasable commodity are the same. The economist quite legitimately balances an expected satisfaction against another expected satisfaction; he speaks, however, as if he balances the intensity of a mental state against a piece of metal money, but this is not an essential circumstance.

MEASUREMENT OF UTILITY.—Thus it is best to define the utility of a definite amount of a particular commodity under certain conditions as the satisfaction which the consumption of that commodity is expected to give to the individual consumer concerned under those conditions. It cannot be measured, but it may be compared with a corresponding utility, that of another commodity or of money. Although utility cannot be measured, it is possible to estimate the amount of money which will give

the same satisfaction as that of a commodity whose utility it is required to find; thus the utility of the unit of money may be taken as a measure of other utilities. For convenience, it may be said that utility is measured in money; more accurately, we say that two utilities may be compared, as being in the same ratio as two sums of money, but the question is quite independent of money. Even in the present order of society we frequently compare the utilities of commodities without any reference to money.

The preceding account does not exhaust the complexities of the subject; it is not certain that the statement that one commodity contains twice as much utility as another is really justifiable.¹ It is better to avoid the numerical comparison of utilities as far as possible, and to say rather that if the expected satisfactions to be received from two processes of consumption are equal, the price which the consumer is willing to pay for the two necessary commodities will be the same, and *vice versa*. It is necessary to understand these rather subtle distinctions, for a thorough comprehension of utility is required for the elucidation of the difficult problems of Value, which are of vital importance in Economics.

RELATION OF UTILITY TO DESIRE.—Desire, expected satisfaction, and realised satisfaction represent three similar mental states; the individual concerned may use the money measure to make a rough estimation of each of them. Now the economist may wish to measure desire

¹ Most economists now agree that utility cannot be measured in any definite quantitative form. For an interesting proof of this point the reader should consult Mises: *Theory of Money and Credit*. Even if we could say that the utility of A = twice the utility of B, it would be absurd to assert that the utility of A = $\frac{3}{16}$ the utility of B. Neither total nor marginal utility can be definitely measured, and nothing would be gained if they could be. So long as we can say that the utility of $a > b > c$ and so on, that is all that we require to know.

or realised satisfaction, but he cannot do it, for he cannot enter into the mind of the consumer. He can deal directly only with expectations; when he wishes to measure the other mental states, he must assume that the desire for an act of consumption, the expected satisfaction from it, and the realised satisfaction are the same. This is certainly not quite true; a desire often contains an element of unreason, *i.e.* the consumer knows that he will not obtain a pleasure corresponding to the keenness of his desire, while expectation itself is often mistaken. On the whole, however, where a man's habits are fairly fixed, these three mental states will not differ greatly in intensity; it is then roughly true to say that money can measure either a desire or a realised satisfaction.

A bridge between Psychology and pure Economics has thus been built; our starting point will now be the knowledge of the satiability of wants, and our aim the formulation of a fundamental economic law, the Law of Diminishing Utility.

A caution, however, is necessary. While utility is the degree of usefulness of a good as a means to an end, it must not be confused with usefulness in its everyday meaning. Diamonds and munitions of war under certain circumstances have utility in exactly the same way as foodstuffs, *i.e.* they are a necessary means to a desired end. Whether the end is morally desirable or not falls outside the scope of this subject.

6. Theory of Diminishing Utility

Consider the case of a child who finds an abundance of wild strawberries. The first is eaten with intense delight, which hardly diminishes after eating a dozen or so. Sooner or later, however, the first flush of pleasure passes, and an additional strawberry will give much less pleasure than did the first. At a later stage, the pleasure will become more languid, and at last the child will not care

whether he eats another or not. After this point, the child would prefer to eat no more, but if through force of habit he persists, a dislike of the fruit will be created; if the child is naturally greedy, the feeling may turn to nausea, so that on looking back, the child will see that it would have been better to leave the fruit alone altogether, for the earlier pleasure is more than balanced by the later distaste.

This example represents a great general principle. If a man consumes any goods whatever, so that successive units are presented, sooner or later he finds that the satisfaction derived from one unit is a little less than that obtained from the immediately preceding unit.¹ (In the present section, the term "consumption" is given its everyday meaning.) "Sooner or later" must be inserted, because in some cases the pleasure may increase for a certain time.² If a man reads the daily papers in a reading room, the perusal of the first paper may increase his interest in the second, but sooner or later he will read succeeding papers with increasing boredom.

The principle holds good for all classes of satisfactions, whether they be pure or vicious, but the qualification that the units of the commodity must be presented successively, without long interval, must be noted carefully. The man must not have had time to change his habits. A person

¹ The strawberry example is a traditional one, and it has been retained in the new text as a simple concrete illustration, but it must be interpreted with caution as it tends to give the impression that the utility of each successive strawberry differs in some way from the preceding one. That, of course, is not true. If the strawberries are of the same quality, and similar size (there is no reason why they should not be), the utility afforded by any one strawberry is indistinguishable from the rest. The utility declines, not because of any quality, or lack of quality in the strawberries, but simply and solely because the supply has increased. It is because of this danger of misinterpretation that Professor Knight would like to see all "dinner table" illustrations banished from the science.

² *i.e.* the graph may at first rise to the right.

may force himself to do a series of good actions, but soon tires of his resolve; after a time, he returns to the work with equal zest, and finds that he is less easily discouraged; after a succession of attempts, at intervals, he may find a permanent pleasure in the work he at first disliked. In the same way, a succession of vicious acts, at intervals, may lead to a liking for base pleasures. In these cases, the man is not the same at the end of the process as at the beginning.

In concrete experience, however, the utility of any good can only be estimated in connection with the supply of that good, and a little reflection should make clear that the utility of any resources varies inversely with the amount of the stock, though not necessarily proportionately. The reason for this is that as supplies are increased, increment by increment, the wants that are supplied become less and less urgent. A small supply of corn would be used by a Robinson Crusoe for making bread; with a slightly increased supply, the surplus above that required for bread-making would probably be devoted to pies and puddings. If the supply were still further increased, the new surplus would probably be used for the rearing of poultry, and so on, each additional increment satisfying a want that would not have been satisfied under the previous conditions of supply.

Conversely, if a Robinson Crusoe had just sufficient corn to satisfy all his wants, and then for some reason or other his supplies were diminished slightly, the least pressing want would be sacrificed. If his supplies were still further curtailed the next least urgent want would be abandoned, and so on.

It must be noticed, too, that the truth of this proposition is independent of any arbitrarily chosen scale of wants. We cannot say that a particular Robinson Crusoe would abandon poultry-keeping first, because individuals do not arrange wants in precisely the same order of


importance, though there is a marked tendency to a rough correspondence among individuals of the same class, and living under similar circumstances. But we can assert as a universal proposition that the wants judged the most urgent will be satisfied first, and that those judged least urgent will be satisfied last. In the same way, should resources be curtailed in any way, the want judged individually as the least important will be sacrificed first.

It is necessary to labour this point because it has been objected that the marginal theory assumes that human beings always act rationally, just as Ricardo's economic men always followed the dictates of self-interest. But it makes no such assumption. Whether a starving man on finding a shilling spends it on food or shelter, or on beer and tobacco, does not affect the principle that he will satisfy the wants most urgent on his scale before attending to the less important.

As the supply of any resources increases, the utility of the whole stock and the significance of any particular portion gradually diminishes after a certain point. The qualification after a certain point is necessary, because in the example of the child eating the wild strawberries, the first few berries would stimulate her appetite rather than satisfy it if it were very hungry.¹ Conversely, a gradual reduction in the supply of any given resources would increase the utility of the stock as a whole, and the significance of any particular part of the stock, for a given end.

This changing significance of successive increments and decrements of resources, and of changes in the total amount of their supply is the second fundamental principle of Economics.

¹ More generally, and independently of these doubtful "dinner-time" examples, a given supply of any kind of resource may be too small to satisfy the least important end. A gradual increase in the supply would therefore relate it to ends higher up in the scale of the individual's preferences.



An exception must be made in the case of the so-called free goods, air and water, simply because that, normally, their supply is so large that no question of scarcity arises, that is to say, they are not economic goods. But in some parts of the world, and even in England under abnormal conditions, water can, and does, command a price, and there are cases in which this even applies to air.

So far, we have considered resources as given, but in the order of society in which we live, the adaptation of means to ends is regulated through the mechanism of price. In catering for a household, or in any other form of economic activity, which particular commodity is bought, and the quantity bought, depend partly on its price, and partly on the price of possible substitutes. And the matter does not end here, because in many cases the kind of commodity chosen, as well as the amount of it, will be determined by factors that have nothing whatever to do with the end in question. Expenditure on food may be conditioned by a desire for furniture renewals; household expenditure in general may be balanced against such alternatives as holidays, children's education, and the desire to make provision for old age. But whether we consider the matter from the point of view of goods, or from the standpoint of price, the principles laid down above hold good.

7. Margins, and Diminishing Marginal Significance

The principle of the diminishing utility of the services afforded by the gradual enlargement of a stock of resources leads us to the question of margins. We have already seen that our imaginary Robinson Crusoe devoted his increasing supply of corn to less and less urgent uses. Now the least important use to which a given supply is put is the marginal use, and the portion of the resources applied to that use is the marginal part of the supply. In the case of the use, it is the want that is just worth

satisfying, under the existing conditions of supply, and the one that would remain unsatisfied, if for any reason whatever the supply were slightly curtailed. In the case of the supply, it is that part of it that is just worth while to obtain. After the child has gathered a certain number of strawberries a point is reached at which the satisfaction derived from an extra berry would be less than that derived from another employment. Or, to take a more concrete example, a housewife buys plums, say pound by pound¹ to provide for all their alternative uses, but sooner or later she estimates that the money spent on an extra pound could be expended to better advantage on something else. The last pound purchased, *i.e.* the pound that was just worth the price to her, and the one that would not have been purchased had the price risen slightly, is the marginal pound.

Again, to view the matter from another angle, if we bring all possible purchases into relation with a commodity in order of the intensity of their effective demands, the purchaser to whom the commodity is just worth its given price and who would not have bought at a slightly higher price is the marginal purchaser.

Now to prevent misconception, one or two points must be emphasised. The margin is not a fixed point, and it is not an independent point. It depends ultimately on ends, and immediately on supply, and in a monetary economy on price. As the margin is the point at which further acquisitions of a commodity will be discontinued for reasons given above, it will advance and recede with every expansion and contraction of the available supply. The reason is that, as has already been explained, when the supply expands, the commodity in question will be put to less urgent uses; on the other hand, as the supply contracts the lowest use to which the commodity will be put will be

¹ It is convenient to put the argument in this form, but not essential.

a relatively more important one, but in either case the margin will still exist in relation to the supply, only its position will have changed.

If we now turn to the marginal purchaser it is clear that his position will rise or fall with changes in supply reflected in price. As the price gradually rises so does the marginal purchaser in the scale of effective demand, while on the other hand as the price falls new purchasers step in at the margin. Whichever way we approach the margin we see that it is a moving margin, and related to supply, or supply reflected in price.

The marginal utility¹ of any commodity, then, is measured by the gain or loss of utility of a slight increment or decrement to a given supply. It is not necessarily a specific unit. All the units of the supply may be identical in quality, and hence interchangeable, so that in a sense, all may be regarded as marginal units with changing conditions. It is true that in some cases a supply may be composed of units differing in quality, land, for example, and machines in a factory, and in this case it has become customary to describe the worst grade of land, and the most obsolete machine as marginal, simply because if for any reason supply were decreased, this land and this machine would probably, but not necessarily, go out of use first. But they are not marginal by virtue of any quality, or lack of quality in themselves, but simply in relation to the supply demanded. If for any reason supply must be curtailed, some land and some machines must go out of use, and the result is the same whether these factors are identical or vary in quality.²

¹ Later on in the book we shall substitute the term marginal significance.

² This point will be stressed in several chapters. Because most factors of production can be graded according to efficiency it has been the custom in many textbooks to class the least efficient factor as the marginal one on the assumption that it would always enter the supply last, and leave it first. This is doubtless true in some

The fact that the total utility of any supply of resources possessed by any one increases as the amount of the supply increases, though at a decreasing rate up to a maximum point, while the marginal utility of the commodity diminishes with every increase in the amount of that supply, can be illustrated by the aid of a little elementary mathematics.

Suppose $y = 50 + 30x - x^2$ is the equation of the curve of total utility of a commodity.

Then the first derived function, $\frac{dy}{dx} = 30 - 2x$, will give the marginal utility of the successive units of the commodity.

Now if we give x the successive values 1, 2, 3 . . . we get the following result:—

VALUE OF x .	TOTAL UTILITY OR VALUES OF y .	DIFFERENCES.	MARGINAL UTILITY OR VALUES OF $\frac{dy}{dx}$.
1	79		28
2	106	27	26
3	131	25	24
4	154	23	22
5	175	21	20
..
..
..
13	271	..	4
14	274	3	2
15	275	1	0
.....			
16	274	—1	
17	271	—3	

cases, but it does not necessarily follow at all. The increment of any factor last to enter a given supply is that which has been held back by the force of profitable employment elsewhere, and it has only been brought in by a rise in the price of its services. Conversely, a fall in price would drive it back to its old employment if that were still available. Any unit of a supply may prove to be the marginal one with a sufficient change in price, or, what comes to the same thing, if the supply has to be reduced. It is more correct and gives rise to much less occasion for errors if we ignore differences in efficiency and look solely at changes in supply.

The total utility increases up to the fifteenth unit, when it is at a maximum, but whereas the second unit of the commodity increases the total utility by 27 units of utility, the third unit of the commodity brings an increase of only 25 units of utility, and the fifteenth unit of the commodity an increase of only one unit of utility. The marginal utility decreases from the first unit and reaches zero when the total utility is at a maximum.

It must be remembered, however, that the above table merely illustrates a mathematical law of relative change in two related quantities. The figures, apart from being hypothetical, must not be interpreted in any quantitative sense. Neither total nor marginal utility can be quantitatively measured, but if we could measure total utility then marginal utility would decrease in accordance with mathematical laws as the total utility increased. It will be shown in the next chapter that it is not necessary to a theory of value that utility should be measured, and that the term marginal utility can be replaced by another concept which avoids this difficulty. It is better, therefore, to speak of marginal significance in relation to supply rather than of diminishing marginal utility.

In certain exceptional cases the curve may be such that the marginal utility may rise at first, but it always falls in the long run. It becomes zero when the individual is indifferent to further possession or consumption, because this would take the total utility past the maximum point.

The great majority of economic goods are so limited in quantity that the man of moderate means who desires them at all can afford to buy them only up to a certain point, but he would have continued to procure them had they been free goods. Thus the average man must cease to buy goods at a point where they will still give him a positive though diminishing marginal utility, and before the point at which their total utility is at a maximum.

8. The Importance of Margins

In actual normal circumstances we are seldom concerned with total utilities afforded by commodities or services, but only with the least valued portion of the supply. The reason is that the question seldom arises of going without food, clothing, or furniture altogether. On the other hand, most people are daily considering the advisability of slightly increasing or decreasing the supplies of these commodities among others. As we ascend in the scale of wealth the nature of the wants or ends changes, but the general principle holds for all cases. Attention, therefore, is always directed to the units in the neighbourhood of the margin, because it is at the margin that all choice is made.

In choosing between alternative commodities, or in devoting resources between competing ends, it is always marginal units with which we are concerned, and these alone determine our conduct, which as rational individuals should be directed so as to secure the same marginal satisfaction in whatever channel a given part of our resources is invested.

This simple theorem illustrates the vital importance of margins with respect to our conduct. Suppose, for example, that I estimate the marginal worth of a second-hand motor car to be £50, I shall purchase it if the sum of the marginal satisfactions of the various competing wants of the moment appears to be not greater than £50.

The reason for this is not far to seek. By purchasing the motor car, I shall gain a slight excess of satisfaction over what would have been obtained had I expended the £50 on any other single purchase, or distributed it in various amounts by the purchase of a number of objects. Unless the marginal satisfactions derived from the different ways in which I have expended my resources, whether of money or goods, are equal, I have not reached a position of stable equilibrium. It will clearly be to my interest to withdraw

resources from the uses in which their marginal utility is low, to increase the supply at points at which the marginal utility is high. But this transfer of resources will raise the marginal returns in the first direction, and lower them in the second, and the process will be continued until the returns at every margin have been equalised. This principle is known as the law of equi-marginal returns.

This leads us to the question of what Wicksteed calls the relative scale. Every person, consciously or otherwise, arranges his valuations of marginal resources in relation to ends in a scale of importance; or to look at the matter from another angle, he arranges his wants in relation to resources in a definite order, placing the most urgent first, and the others in a descending scale, down to the want that is only just worth satisfying with the resources in hand, or what in practice amounts to the same thing, at current prices.

This scale is not of fixed length. It lengthens as resources become more plentiful, and shortens correspondingly as resources become more scarce, for certain wants are satisfied or neglected according to the state of our resources. The order on the scale, too, is not necessarily constant. New wants constantly enter and disturb the sequence, and apart from that, any existing series of wants may change in relative importance as the quantity of our resources changes.

The order on the scale need not be a rational one, but, rational or irrational, it exists in the mind of every human being, and is as universal as the principles of relative scarcity, and the diminishing marginal utilities of services and commodities as the supply is increased.

In one sense, these scales are individual, *i.e.* they are constructed by individuals according to their estimate of the order of importance of their wants. But it is quite legitimate to speak of a communal scale, or perhaps more accurately, of communal scales, for these individuals are not isolated entities, but individuals with tastes and prejudices moulded

by the social environment in which they have been born and reared. The scales of normal individuals of the same social class, therefore, tend to a rough correspondence, at certain points at any rate; hence it is possible to draw up a communal scale for normal individuals of the same class, and what applies to individuals of one social class, applies to some extent between the different classes that constitute society.

It is possible, therefore, theoretically, to draw up a relative scale for the whole community that would approximate at some important points to the scales of normal individual members, and at a greater number of points to the relative communal scales of the different social classes.

Once again, before leaving this subject, it must be emphasised, to prevent misconceptions, that there is nothing rigid about the content of this principle, but whatever modification the content may undergo, the principle itself remains constant and universal. The three principles discussed in this chapter provide a firm foundation for a unified system of Economics, and once they are grasped, all that remains is to work out their implications through the different aspects of the subject.

9. Some Objections to the Marginal Theory

Self-evident as the marginal theory is, when viewed from a proper angle, as a rational explanation of the way we naturally distribute our resources, material and immaterial, it cannot be said to be accepted universally in all its implications. Very few economists reject it entirely, but many still refuse to regard it as the main-spring of the subject, and retain it as complementary to the cost of production theory of the English Classical School of Political Economy, or to some modification of that theory. This matter will be considered in the next chapter; all that we shall discuss here is some apparent internal objections to the theory.

In the case of ordinary physical needs which obviously quickly reach satiety, diminishing significance is freely conceded, but it is argued that the case is otherwise with respect to money and non-material satisfactions. It is true, of course, that with certain men the desire to make money increases progressively with their wealth; this, however, does not invalidate the principle that the marginal significance of any particular sum of money has declined as the income has increased. This is a fact demonstrable by observation and experience.

There is no valid justification for placing non-material pleasures in a separate category. No doubt, the more I read the more I want to read, but why? Simply because through reading, my tastes and interests have expanded. In other words, I am on a higher plane than I was originally, that is to say, I am a different person. Had my tastes and interests remained constant, the pleasure gained from reading would have quickly declined, and unless I change incessantly I must finally reach a level at which the pleasure diminishes.

Marginal significance and price do coincide theoretically, but it does not follow that they always do so in practice. Errors of judgment are bound to occur, and frictions are always present in a dynamic world to some degree.

Most of us are creatures of habit to some extent, therefore we tend to treat certain items of expenditure as routine expenses. For this reason, our marginal returns are not always equalised, especially where, through force of custom, over-expenditure does not press seriously upon income. But it is easy to exaggerate the significance of this, because even in the case of routine expenditure of any size, we cannot, in the long run, avoid the question, is it worth while to curtail it in some detail or details in view of new demands that have recently arisen? The annual holiday is a case in point with many people.

But the objection most frequently met with, is that we do not always consume goods in a series of small continuous increments, which the theory appears to assume; hence, and this applies with special force to durable goods, marginal significance may diverge considerably from price. This is the ground on which Hobson and Cassel have rested their attacks.

It is true, of course, that in the case of a house, the initial purchase is the final one, but this does not really affect the position. The distinction between isolated and recurrent expenditure is not an ultimate one, but one merely dependent on the nature of the goods in question. Foodstuffs are bought in small quantities from day to day for obvious reasons. Coal and clothing are bought in larger, but still relatively small quantities, owing to the difficulty of storage, changes of fashion, and the fact that most people receive their wages or salaries in small amounts at frequent intervals. But it is quite legitimate to regard these expenditures as at the rate of so much per year, or any other period. Conversely, the purchase of a house or any durable good can be regarded in precisely the same way.

A house purchased for £1,000 cash can be regarded as purchased at a rate per annum, month, or even day, and as a matter of fact it is on this principle that most people purchase their durable goods. Whether goods are purchased outright or by instalments, depends mainly on a person's resources.

From the point of view of distributing our resources, goods do not fall within different categories. In both cases alike the fact that marginal significances decline as supplies increase is the factor that determines our choice between uses of different resources.

The matter may be looked at from another angle which may throw further light on the problem. Just as flour, salt, and milk have alternative uses, so durable goods like

clothing, houses, and motors possess not one, but various utilities. A house, for example, affords not only shelter, but convenience, prestige, and so on. If the good as a whole has not a marginal significance for anyone, there is some aspect of it that has, and which thus reduces it to the same denomination as other goods which are beyond reproach from the standpoint of this theory.

Another objection urged is that marginal price often depends not only on the marginal significance of the thing concerned, but also on the next alternative use for the money. This is quite true, but although it may be valid against some of the earlier presentations of the theory, it has no force here, because throughout our exposition, the interdependence of commodities and ends or wants has formed an integral part of the argument.

Hobson: *Industrial System* (Appendix on Clark), raises a more subtle objection. He argues that industrial production is the result of an organic, not a mechanical, compound of land, labour, and capital, and that in consequence, any attempt to measure the contribution to the total product made by each factor by the device of measuring the effects of the withdrawal of marginal units of these factors must give an inaccurate result. Because the factors are organically combined the withdrawal of a marginal unit of one factor would decrease the product by more than can be attributed to that unit. The sum of the marginal products thus calculated, multiplied by the number of units of each factor, would fail to coincide with the total product.

Hobson is well answered in Knight: *Risk, Uncertainty, and Profit*. The fallacy lies in fixing attention on relatively large blocks of resources in comparison with others, and is really only a particular aspect of the case discussed on a previous page. The essence of the marginal argument is that the marginal units must be small relative to the supply in use, and in modern industry this is usually the case. In any event, as Knight points out, any error arising

from this source is not likely to be great. As a rule, it is not necessary to break up a combination to measure the marginal significance of a factor. Where the factors of production can be combined in variable proportions, two different combinations that give the same result can be compared.

10. The Law of Demand

The law of demand can now be formulated more definitely with respect to everyday conditions.

Demand has a more concrete meaning than desire; we may say that "The demand of a person for a commodity at a certain price is the amount he is willing to buy at that price." Demand, like desire, is individual, but also it depends on and varies with the price.

A housewife estimates roughly the total price of each article she buys, and increases or lessens her stock as prices fall or rise. Take a concrete example, *e.g.* butter; in this case she will be concerned not so much with the amount of butter on hand as on the amount bought per week; no new principle is thus involved, for the laws which apply to size of stock will apply equally to the amount bought in a certain time. We must, however, change our unit, and speak not of pounds of butter possessed, but of pounds bought per week; our unit may thus be one pound of butter per week. The following table will then suggest the influence of price changes on demand.

Such a table is known as a Demand Schedule. The compilation of such a list is of some practical difficulty; it might be supposed that statistics of prices and sales in previous years, or periods of time would furnish the necessary information, but the habits and tastes of the people, and other circumstances, are continually changing. The compilation of a demand schedule requires special knowledge, and experience. Here, however, we are only concerned with the general law of price formation; individual

demand in the economic sense is a meaningless term unless the price of the article in question is given.

<i>Price.</i>	<i>Demand.</i>
1/- per pound	5 pounds.
2/- " "	3 " "
3/- " "	1½ " "
4/- " "	½ " "
5/- " "	¼ " "

The laws of individual demand apply so well in the case of group demand that little is gained by an attempt at separation; in some ways the latter is more useful in economic study; it is also steadier and easier to estimate. The total demand for a commodity at a given price under given conditions is the sum of the separate demands of the individuals in the group concerned. Group demand is often fairly steady because the individual peculiarities of different consumers tend to neutralise each other; also, a man's demand for, *e.g.* motor cars, is most uneven as, owing to the huge price of a car, a second car will in normal circumstances give him far less utility than did the first; if, however, a dealer is in contact with a large number of well-to-do men, he finds his sales to be fairly constant. The law of demand may then be stated:—demand increases when the price falls, and vice versa.

The law of demand is not a quantitative statement; a schedule is not absolute, but varies for different persons and for different commodities; it may even alter for the same person in relation to the same commodity. An "increase of demand" or a "raising of the demand schedule" is possible; the purchaser will then be willing to take a greater quantity than before for each separate price. In any particular schedule, again, there is no simple relation between price and demand; *e.g.* it is only rarely and accidentally that the doubling of price will exactly halve the amount bought. If the price of salt is

doubled, there will be little change in the amount bought, but if that of amusements is doubled, the demand may be much less than half what it was.

It should also be noted that a demand schedule for any good makes the assumption that the prices of all other things remain constant. The amount of any commodity that an individual is prepared to buy depends not only on the price of that commodity, but on the prices of other things as well. The demand for motor cars of a certain horse-power depends on the price of petrol, oil, the amount of the tax and insurance, etc., as well as on the price of the car. Changes in the cost of these items will affect the demand for cars at a given price; the direction of a schedule, or the shape of a demand curve thus changes continually.

As a general rule a demand curve slopes downwards from left towards the right. That follows from the law of diminishing marginal utility. As the price falls existing buyers tend to buy more than before, and new buyers, formerly excluded by the higher price, now begin to purchase.

There are, however, one or two exceptions to this rule that have been pointed out by Wicksell and others. In some cases a rise in price may stimulate demand, and cause a curve to slope upwards for some distance, but in the long run it must fall again. A rise in the price of certain commodities may increase the demand for them by making them more fashionable. A rise in the price of Consols may induce speculators to buy in the hope of a further rise. In the case of the poorer classes a rise in the price of a commodity may cause many people to curtail their expenditure on substitutes, and complementary goods, and to buy more of the commodity at the higher price than before.¹ These exceptional cases, however, do not invalidate the general law.

¹ See Wicksell: *Lectures*, and Benham, *Economics*.

11. Elasticity of Demand.

If a slight rise in price is followed by a large decrease in the amount bought, demand is said to be elastic; it will also happen normally that a slight fall in price will lead to a large increase in purchases. If, on the other hand, the demand remains relatively constant for slight changes in price, the demand is said to be inelastic. When a slight change in price causes an exactly proportionate change in demand, the elasticity is said to be unity.

From the concept of elasticity several propositions follow:—When the elasticity of demand for a commodity is unity, slight changes in price will not change the total amount of money spent on that commodity. If the elasticity is greater than unity a slight fall in price will increase, and a slight rise in price will decrease, the total amount of money expended on the commodity. On the other hand, when the demand is inelastic, a slight fall in price will decrease, and a slight rise in price will increase, the total amount of money spent on the commodity.

The elasticity of demand is not constant for all parts of a curve, as it is influenced by many circumstances.

Perhaps the best example of an inelastic commodity in England is that of salt; this is a necessary article and a very cheap one, and these facts, on the whole, imply inelasticity. Most necessary commodities, and also some very cheap ones, are subject to inelastic demand. Cases of elastic demand are less clearly recognised, but it may be said on the whole that those goods which are luxuries and are very high-priced, relative to a particular social class, will be subject to an elastic demand, as regards that particular class. The demand for admission to a football match is inelastic to a man of means, for the price to him is low, but it is very elastic to the errand-boy; the demand for stand accommodation is elastic to the middle-class enthusiast, but inelastic to the rich man, though the

utility of superior accommodation to some poorer men might be so great in relation to their marginal utility of money that this particular demand might be inelastic. What a rich man considers a low-priced necessity, a poorer man may regard as a high-priced luxury, and the degrees of elasticity will vary in the two cases.

Further, elasticity varies at different levels of the schedule: the demand for sugar before the war was inelastic for the rich, but elastic as regards the poorest classes. In some countries, salt is so limited in quantity that the demand for it is elastic. Again, if the supply of any commodity whatever is so increased that the price falls sufficiently, the demand for it becomes inelastic: if diamonds were so common that they filled the markets to overflowing, the demand for them would become inelastic. If they were highly prized, but extremely rare, the demand for them would be elastic for all classes; under present conditions, demand is inelastic in the case of some millionaires. If diamonds gradually fell in price, elasticity would decrease for richer men at each successive fall, while remaining high for those who could just afford to buy them.

Many factors may influence the elasticity of demand for any good or service. Demand will tend to be elastic in proportion to the number of substitutes available; a slight rise in price will cause more or less substitution of an alternative commodity, and conversely, a slight fall in price will transfer to the commodity some demand from alternative goods.

If a good, or a service can be used for several different purposes the demand for it will be elastic, as a slight fall in price will cause the commodity to be used for purposes not worth while before.

The statement that luxury goods have a highly elastic demand needs qualification. Some so-called luxuries may have an inelastic demand over a range of prices; at the

same time, in many cases, the less necessary a good is judged by an individual, the more readily will his demand expand with a slight fall in price. Slight price changes have little effect on the demand for commodities such as salt, but where a good is sold at a relatively high price when supplied in small quantities, elasticity tends to increase rapidly with every fall in price. The usual demand curve slopes steeply near the origin (low elasticity), and then gradually flattens as it approaches the horizontal axis (high elasticity).

The elasticity of demand for a factor of production varies with the importance of its rôle in the production of a good. If its hire price is small in relation to total costs, a slight fall in commodity prices would not throw any fact of the factor out of employment. The demand for many durable goods such as machines and motor cars may be fairly elastic in the short period because the time of their replacement is not fixed. A slight rise in price may cause them to remain longer than their normal time in use.

The construction of a demand curve presents no difficulty to anyone familiar with graphical methods. As an example, the following demand schedule may be considered.

<i>Price.</i>				<i>Demand.</i>
1s. per lb.	..	..	..	5½ lb.
2s. „	..	..	..	3½ „
3s. „	..	..	..	2 „
4s. „	..	..	..	1 „
5s. „	..	..	..	½ „

From these data, a Demand Curve may be constructed, using squared paper. The first step is to decide what scales shall be used. Suppose that demand is measured horizontally and price vertically. If the size of the paper permits, it may be convenient to let one square measured horizontally represent one pound, and one square measured vertically represent one shilling; but other scales may be

more convenient. It is not necessary to use the same scale for a unit of weight and a unit of price, but if this is not done, the fact must be noted.

In Fig. 1, unit amount is represented by one large square in each case. The next step is to "plot" the points representing the data in the schedule. Two

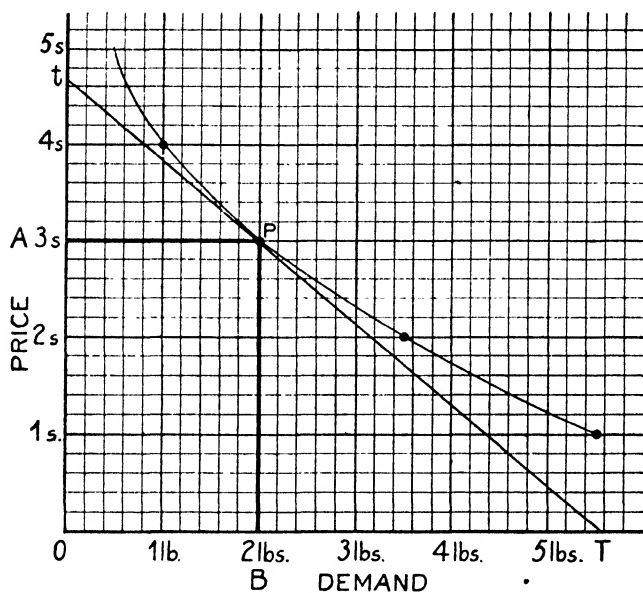


Fig. 1.

perpendicular lines are taken as "axes"; the point at which they cross is the "origin." The paper is arranged so that the origin is at the bottom left-hand corner, the two axes being horizontal and vertical respectively.

Thus the 5s. line will be horizontal, five squares above the horizontal axis; from the origin, five squares are measured vertically, and the horizontal line through the

point thus obtained is the line required. At this price, half a pound is sold. The half-pound line is vertical, half a square to the right of the vertical axis; it is found by measuring half a square horizontally to the right of the origin, and drawing a vertical line through the point obtained. The point at which these two lines cross represents, at the same time, both 5s. and half a pound; it is marked in an appropriate manner. The four other items in the schedule are then represented by points found in the same way.

Now it is not likely that there will be sudden jerks in the amount demanded, as price rises or falls continuously, especially if the schedule is collective and not individual. It is probable that demand will vary between the points actually marked in a manner which may be predicted approximately from the general lie of these points. Thus if the points plotted are in a straight line, it is probable that if other data are obtained and the schedule made more complete, the new points which can then be plotted will lie on or near the same straight line. More generally, the points actually obtained will appear to lie on a smooth curve; if such a curve can be drawn to include the plotted points, it is likely that it will represent approximately the general lie of the points that would be obtained if an enormous number of items were obtained in the same schedule between the same limits. Thus it is often possible to obtain a few representative points on a graph, spaced at regular intervals so that a continuous curve can be drawn; it will then be possible to predict with some accuracy the demand which would exist at a price which is not represented in the schedule, but which lies between two prices which are given. Thus, in the figure, it seems that the demand at 1s. 6d. would be about $4\frac{1}{2}$ lb.

A similar graph could have been plotted by measuring demand vertically and price horizontally, but its appearance would as a rule be different. It is advisable to adopt

a convention in this matter; it is usual to measure demand horizontally.

A peculiarity of the demand curve arises from the existence of the law of demand; as an increase in price means a shrinkage of demand, it is plain that the curve will slope downwards from left to right; it is then said to slope negatively. If a curve slopes upwards from left to right, it is said to slope positively.

A demand curve is a useful aid to the understanding of the meaning of elasticity of demand. If the curve is steep at any point, it follows that a large fall in price from that represented by the point will occasion only a small increase in demand; other things being equal, therefore, the steeper the demand curve the more inelastic is demand. Elasticity, however, depends on proportionate and not absolute changes in price and demand; it thus depends on the position of the point on the curve as well as on steepness.

Let P be any point on the demand curve in Fig. 1. Tt is the tangent at P . Then Marshall's formula gives the elasticity of demand at P as the ratio of $PT : Pt$. This ratio could also be expressed by $TB : OB$ or $OA : At$. If $PT = 2 Pt$, the elasticity of demand is 2, or in other words, a fall in price of one per cent. would increase the demand by 2 per cent. If $PT = Pt$, the elasticity of demand is unity.

The non-mathematical student must accept the statement that a curve can be drawn which everywhere represents unit elasticity. If any point is taken on such a curve the product of the perpendicular distances from the two axes is always the same. In economic terms if the product of price and quantity is always the same, *i.e.* if the same total amount of money is paid whatever the price per unit, elasticity is unity. If at any point the demand curve in question is steeper than the "rectangular

hyperbola " through the point, elasticity under the given conditions is less than 1, and *vice versa*.

If the curve had been drawn so that price was measured horizontally and demand vertically, greater steepness would imply greater elasticity, and *vice versa*. Elasticity is one of the fundamental concepts of modern Economics. As we shall see later, it applies to supply, and to the rate at which one factor can be substituted for another, as well as to demand.

12. Factors that Cause a Change in Demand

Many factors tend to either increase or decrease the demand, in some cases for particular goods, in other cases for commodities in general.

In the short period the general state of trade has a very important influence on the demand for most commodities. When trade is booming, the demand for all commodities tends to increase, though not necessarily in the same proportion; on the other hand, during a trade depression, the demand for most commodities tends to be curtailed.

The demand for any individual commodity is affected in the short period, and probably in the long period too, by the price changes of other goods. A rise in the price of *B*, or *C*, etc., is likely to reduce the demand for *A*, for, as a general rule, when more is spent in one direction, expenditure must be contracted in another; conversely, a fall in the price of *B*, or *C*, etc., may possibly increase the demand for *A*. This is even more true in cases when goods either substitute each other or are used jointly with each other. A rise in the price of butter would tend to increase the demand for margarine, for example; an increase in the demand for tea, due to a fall in the price of tea, would be likely to increase the demand for sugar, and possibly cream.

Even in the fairly short period, tastes and fashions change considerably; the development of the motor car

has made certain industries connected with the horse—the making of saddles, harness, whips, etc.—almost obsolete.

In the long period the two main factors that influence demand are changes in the size of the population, and changes in the amount of the real income per head of the population. A rise in the average real income per head of the population may not increase the demand for the primary necessities of life—food, clothing, and shelter—but it will increase the demand for the so-called luxuries. Even with respect to the primary necessities of life there will be some shifts of demand from the lower to the higher grades of these goods.

An increase in the size of the population, especially when due to the birth rate, will stimulate the demand for food-stuffs, clothing, and shelter; it will have a very marked effect on the demand for commodities consumed by children and young persons. Conversely, a declining population, due to a falling birth rate, will decrease the demand for the primary necessities of life, and will increase the demand for the so-called luxury commodities. There will be fewer persons needing houses, food-stuffs, and clothing; and even if the average real income per head remained constant, the smaller family means that individuals will have a higher proportion of income to spend as they please.

12. Consumers' Surplus

The study of demand schedules led Marshall and others to the conception of consumers' surplus, and until very recently it occupied a place in all the textbooks. The moment, however, we recognise that utilities are not quantitatively measurable, or if at all, only in a very vague and indeterminate sense, the notion of consumers' surplus becomes misleading. We can, as we have seen, arrange utilities in a scale of descending order, and we can say that one utility is greater or less than another, but

the moment we attempt to give numerical precision to these magnitudes, and particularly when we translate them into monetary terms, we are in danger of reaching conclusions that do not accord with plain common sense. As Professor Knight has pointed out, it may be true that a starving millionaire may be willing to give £100,000 for a sixpenny loaf, but it is a little difficult to believe that when he gets it for 6d. he gains £99,999 19s. 6d. of surplus satisfaction. Professor Knight suggests, therefore, that in drawing utility curves the commodity axis should be omitted. Preference would be shown as increasing in a vertical direction, but the removal of the " x " axis would take from the ordinates that definitely quantitative character which is suggested by the customary diagrams.

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CHAPTER III

VALUE

1. Importance of Value

The concept of value has always occupied a central position in treatises on Economics. In the language of the older textbooks, it cannot be neglected in the study of production; it cannot be understood apart from consumption; it permeates the study of distribution, and it has a vital connection with exchange.

All this is quite correct, but when we examine the nature of the forces that determine the value of any commodity, we are confronted with a controversy that has been waged for over a century, and which has not yet ended. The main purpose of this chapter, therefore, will be to examine this controversy in some little detail with a view to a clear exposition of the correct solution.

Value is often defined as the exchange qualities of a commodity, that is to say, the value of a commodity is the power it possesses of acquiring other goods, or services, by means of exchange. Translated into monetary terms this definition leads to the value of anything being its price, and for ordinary practical purposes, both may be accepted as useful working definitions.¹

It should be remembered, however, that when we identify value with price it is marginal values that we have in mind. Total values have little significance for economic conduct, because the problem of doing without

¹ Some economists, Cassel, for example, argue that any attempt to get beyond price is superfluous, but his critics object that he has only succeeded in disguising the notion; he has not eliminated it.

the whole of a good or service does not normally arise, but it is part of the routine of daily life to consider the question of slightly increasing expenditure in one direction, and of slightly decreasing it in another. This is especially true with reference to the factors of production. All forms of production require some combination of land, labour, and capital, and none of these factors can be eliminated entirely. But the proportions of these factors in any combination can be varied considerably, and marginal units move continually from one line of production to another. It is therefore marginal values with which we are mainly concerned and in a state of equilibrium marginal values coincide with prices.

The business of the economist, however, is to get behind surface phenomena to ultimate causes, and it is here that the controversy begins. But before passing to it directly, it is necessary to grasp clearly that in the discussion of scarcity of means in relation to ends, diminishing marginal significance, and relative scales, which formed the substance of the last chapter, we were really examining the forces that determine value without naming it explicitly. The value we assign to any commodity or service is obviously measured by the position the commodity or service occupies on our relative scale of preferences, and, as has already been shown, the relative scales of normal persons of the same class tend to a rough coincidence with respect to articles in general use, or that enter freely into the circle of exchange; hence a generalised notion of value is possible.

As a provisional solution we may say that the value of any commodity or service depends immediately on the position it occupies on our relative scales of preferences, and more ultimately on its marginal significance, which in turn is determined by the relative scarcity of means in relation to ends or wants. In a certain sense it is true that exchange qualities are an integral part of the concept

of value, because we live in an economic order of society organised on an exchange basis; but exchange in the narrow industrial sense is not fundamental to the concept, because, as has been emphasised several times, all economic behaviour can be explained with reference to the home, in which exchange in the narrow industrial sense does not enter.

2. The Principle of Substitution

In the household economy, exchange in the commercial sense is replaced by substitution. The cases where one commodity can be wholly replaced by another unlike commodity are rare; on the other hand, the instances where a marginal increment of one good can be replaced by a marginal increment of another good without diminishing the satisfaction enjoyed are very common, and so are the cases in which substitution affords a means of increasing the possibilities of satisfaction.

But the principle of substitution has a wider range than that of the household economy. Every act of exchange is an act of substitution, so that it may be said that substitution is the keynote of all economic activity. Outside the few possible exceptions of the household economy, all substitution is marginal substitution. No factor of production can be wholly replaced by another, but a certain proportion of any factor can be substituted by another. When a factor of production becomes relatively scarce its hire price rises. It becomes profitable, therefore, to use a little less of the scarce factor, and more of some substitute. But as soon as substitution begins, relative scarcities, and in consequence, the prices of the factors of production begin to change. The slightly decreased demand for the one factor tends to lower its price; the increased demand for the substituting factor raises its price. Substitution will cease, therefore, when the marginal products of the factors concerned are proportional to their prices.

Substitution can also be viewed from another angle—that of the different uses to which a service or commodity may be put. But from either point of view it is clear that substitution will cease when the marginal returns of a service or a commodity are equal in all fields of employment. Substitution has definite limits.

3. Cost of Production Theory of Value

The manner of viewing value in relation to order on a scale of preferences is relatively modern. The foundations of it were laid independently just after 1870, by Jevons in England, Walras in Switzerland, and Menger in Austria, and their work came immediately in conflict with a much older theory, sometimes called the labour theory, and sometimes called the cost of production theory of value. These two terms are often met with as different theories of value, but they are not fundamentally distinct, for the labour theory was only an attempt to reach the ultimate forces behind the monetary expenses of production which no one ever really claimed to be final. The cost of production theory was merely an entrepreneur's theory, a theory of the market-place; it was not a philosophical explanation of value. We shall see later that Ricardo resolved all monetary expenses into proportionate labour costs.

As a corollary to his parable of the beaver and the deer, Adam Smith observed in *The Wealth of Nations* that it is natural for commodities to exchange in the ratio of their labour costs, or in other words, for the value of three days labour to be greater than that of two; but the labour theory was old when Adam Smith wrote. In its modern form it dates back to John Locke at the end of the seventeenth century, who wished to obtain a surer basis for property than natural law or theological sanctions; and it is not the least of life's little ironies that a theory forged initially as a defence of private property should be used in a later age to uproot the very foundations of that institution.

The labour theory had little practical importance until the Industrial Revolution changed the economic order of society, and then what to Adam Smith seemed an obvious truism received its classic exposition through the hands of David Ricardo, and was subsequently developed even more strongly by Karl Marx.

The theory no doubt received an impetus because the notion that the value of anything is what it costs to produce seemed in accordance with plain common-sense, whether the problem is approached from the point of view of monetary expenses incurred, or from the point of view of the labour efforts behind these expenses.

It is true that an exception had to be made in the case of certain commodities whose supply was fixed and which could not be replaced, as in the case of rare books and old masters, for in such cases no labour costs of production could apply.

It was also found necessary later to introduce a time distinction between long and short periods of supply, for in short periods, a scarcity of supply relative to the demand was found to raise the value of any durable good greatly beyond its original cost. To surmount this difficulty, therefore, a variant of the theory was introduced in the form of costs of reproduction.

Reproduction, however, introduced no fundamental modification of the substance of the theory; it was still a cost theory with the level of the costs changed either by alterations in the conditions of production, or through changes in the purchasing power of money.

But the sheet anchor of the labour costs theory was the very important case of freely reproducible goods, for here the connection between costs and value or price appeared most clear. If the cost of production of an article rose—either the monetary expenses, or the real labour efforts behind these expenses—then the value of the products must rise correspondingly; and conversely, with every fall in these costs, the forces of competition must force down

the price of the goods produced. Every change in value and prices, so ran the argument, had its origin immediately in variations in monetary costs, and ultimately in the increase or decrease of the painful labour efforts in the background of these monetary expenses; and among the orthodox economists this theory of value had the support of such great names as Adam Smith and David Ricardo. It will be shown later, however, that it is much more correct to say that it is value that causes labour to be performed.

4. Rise of the Marginal Utility Theory

The first serious attack on this tradition came, as we have already noted, from three economists, who, working independently about sixty years ago, assailed the theory that value is determined by costs, that is to say, by the amount of labour involved in the making of a commodity. In England, Jevons approached the problem through mathematical methods, as did Walras in Switzerland. Menger in Austria came to similar conclusions through totally different lines of reasoning, and his work there has since been followed by that of Böhm-Bawerk and Wieser, as Jevons in England was succeeded by Wicksteed. Ricardo had concentrated attention mainly on those reproducible goods which are in constant demand and for which the connection between value and cost seemed clearest. These writers, on the other hand, approached the problem from the side of demand.

To outline these theories in detail would involve a repetition of much of the substance of the last chapter. Attacking the problem from the side of demand, they developed the doctrine that the value of any service or commodity is determined by its marginal utility for any particular purpose, and their subsequent influence on economic doctrines has been immense.

5. The Dual Theory of Value

These marginal theorists were revolutionists. Superficially at any rate, they broke completely with the "classical" tradition in fundamental doctrines, but the influence of Ricardo and Mill was too deeply rooted to be lightly cast aside, and a compromise was effected by most English economists which has still to-day numerous adherents in England and America.

This compromise, of which Dr. Marshall was the most distinguished representative in England, consisted in grading commodities into two distinct categories, those whose value is governed by scarcity, that is to say, goods the supply of which cannot be increased by human efforts; and goods that can be freely reproduced. In the first place, demand was admitted to determine their value, but with respect to the second class of goods the emphasis was moved to their cost of production. Between the extreme cases, value was conceived to be the resultant of two equal forces, demand and costs, and costs were interpreted on the lines laid down by Ricardo, the labour efforts behind and proportional to the monetary phenomena. Readers of Marshall's *Principles* will be familiar with his illustration of the blades of the scissors, marginal utility and costs of production. Hobson likewise compared value to the keystone of an arch, supported on the equal forces of supply and demand.

It is easy to exaggerate the advance on the older theory made by the compromise. It is not altogether correct to say that the Ricardian theory ignored demand. In the case of fixed supply goods it had no option, and even in the case of freely reproducible goods the cost of reproduction theory was a concession to the demand forces over a short and exceptional period. But demand forces were considered rather in the nature of temporary frictions; in the long run, real costs determined value.

In the case of the dual theory different writers diverged in emphasis, but there was a strong tendency to regard demand as a secondary force.¹ Professor Robbins makes this very clear with respect to Marshall from whom Jevons and Wicksteed differ as sharply on vital matters of doctrine as they do from Ricardo, and on the question of method, perhaps even more. It is very necessary, therefore, to examine the nature and significance of costs very closely.

6. The Ultimate Nature of Costs

Criticism of the above theories can best be made through an analysis of the notion of costs. For the "classical" economists, and for Marshall, real costs were an independent and ultimate category in no way related to utility. In the final analysis, they were painful efforts.

Briefly, Ricardo argued that the prices of commodities were proportional to the entrepreneur's expenses, which in turn were proportional to the real labour efforts involved in their production. To reach this conclusion, he had to make two assumptions, firstly that labour was perfectly mobile between occupations in any one country, and secondly that labour was the only element used in the production of goods. Strictly speaking, he also made a third assumption which was that the different grades of labour are always combined in fixed proportions. Of course he was aware that, in production, labour is always used in conjunction with land and capital, but he eliminated these terms by supposing that prices were always fixed by the expenses of production at the margin of cultivation where the rent of land was non-existent, and that capital was always used with labour in constant proportions.

If these assumptions were true, it would follow, given perfect competition between entrepreneurs and labourers,

¹ On this matter the introduction to the new edition of Wicksteed: *Common Sense of Political Economy*, should be consulted.

that wages would be equalised in all employments and that prices of commodities would be proportional to their costs in labour.

That these assumptions are not true to-day needs no demonstration. The question of land rent cannot be considered until a later chapter, but it is a fact of experience that neither the various grades of labour nor labour and fixed capital, are combined in fixed proportions. Because substitution is possible to an extent more or less large between all the various resources of production, the proportions of the factors employed in any combination of resources is continually being changed as first one and then another of these factors increases in relative scarcity. It is impossible, therefore, to maintain that any constant ratio exists between values and costs, and this conclusion accords with the experience of everyday life.

More recent writers did not travel so far along that road as did Ricardo, but even Marshall in his exposition of the principle of diminishing utility stops short at the point where utility is balanced by the disutility of labour efforts; utility is always opposed to real labour costs.

Now in a certain immediate sense Marshall was correct; no theory could have been accepted by so many men of genius had it been wholly false, but it is a partial explanation only, not an ultimate and final one.

The errors charged to the labour theory were three: (1) that values are proportional to labour efforts involved in production; (2) that costs are an independent category; and (3) that labour is always a disutility, that is to say, a painful sacrifice.

But if real costs are not labour efforts, what are they? Can we give an intelligible meaning at all to costs behind the phenomenon of monetary payments, a term which merely describes but which affords no clue to reality?

To attack the problem it is necessary to return to Adam Smith's illustration of the beaver and the deer. "If

among a nation of hunters," said Adam Smith, "it costs twice as much labour to kill a beaver as to kill a deer, then a beaver should be worth two deer."

This example shows the labour cost theory in its clearest form; no question of rent and interest enters the problem, and the hunters may be assumed to work in isolation.

Now at first sight it would appear impossible for the beaver and the deer to exchange in any other than the above ratio, because if a man could obtain three deer in exchange for one beaver the deer hunters would cease to hunt deer and divert their energies to the beavers, for with the same expenditure of energy and labour, a man could obtain three deer by killing a beaver instead of only two deer by the direct process of hunting.

But granting this, it does not follow at all that the beaver and the deer would continue to exchange in the ratio of their relative labour costs. This ratio would be preserved only on the condition that the relative desire for deer and beaver, and the relative numbers killed of each remained constant, and this requires assumptions not likely to be realised even in a society of primitive hunters.

A much more satisfactory manner of looking at the problem in the terms laid down by Adam Smith is this. The hunter can kill deer or beaver with equal advantage to himself. If he requires deer, he can kill it directly, or with precisely the same amount of trouble, kill a beaver and acquire the deer by exchange. He has thus a choice between equal alternatives, but, and this is the cardinal point, if he chooses one method he must give up the other. He cannot, on the hypothesis of specialisation, hunt both at the same time.

Now let us alter the terms of the problem slightly, and suppose that no exchange is possible. Two deer are just as desirable as a beaver; both represent equal expenditures of time and energy. But if he hunts the beaver he must

give up the deer, and if he hunts the deer he must give up the beaver. This is the real significance of the problem, and one which Smith quite overlooked.

Economic goods are scarce commodities, and what is of equal importance though often neglected in these discussions, space and time, the latter especially, are strictly limited. Scarce goods and time used for one purpose cannot therefore be used for another. The attainment of one end or purpose thus involves the relinquishing of an alternative one. The real ultimate cost of anything, therefore, is the loss of that alternative use which must be sacrificed when resources of any kind are devoted to a particular object. This principle is of very far reaching and fundamental importance, and, apart from the question of costs, proves clearly that the narrow conception of Economics as the study of business relations in the production of goods is quite misleading.

Robinson Crusoe, for example, decided on the expectation of an attack by savages to strengthen the stockade in front of his cave. What is the real cost of these defence improvements to him? Superficially, and on first thoughts, we might reply with the "classical" school, the amount of disagreeable efforts involved. The matter, however, does not end here. But for the stockade, Robinson would not have remained idle in the sense of doing absolutely nothing. He would have occupied his time and energy to other purposes—to making clothing for the rainy season, or to improving his household utensils, or to building a boat, or to recreative purposes. Clearly, then, it is more fundamental to assert that the real cost of his stockade was not the painful efforts of chopping and digging, but the loss of one of the above alternatives which he might have had but for employing his time and energy in a particular direction.

In the actual concrete case, the reactions on behaviour become highly complex. It is probable that instead of

relinquishing the whole of one alternative, several would suffer modification, but that does not effect the general principle.

But in many cases, particularly in a highly organised economic society, the satisfaction of a desire does not involve any effort at all. An extreme example will make this clear. A hungry tramp with worn-out footwear finds five shillings in the road. His two most urgent needs are a good meal, and repairs to his boots, and suppose for the sake of the argument, that each requires the expenditure of five shillings. In the end, he decides on the boot repairs, and continues hungry. Now, what was the real cost of those boot repairs? It is a superficial reply to answer, the five shillings. In a certain sense it is true, because he actually pays over five shillings in exchange for the repairs, but the ultimate significance involved in the choice of ends is the continued pangs of hunger that could have been appeased by expending the five shillings in another way.

These simple illustrations have a universal application. They apply to all types of societies, and to all individuals, rich or poor. Among savages, and among the poorer individuals of civilised societies, the alternatives relinquished may be physical necessities, and the expenditure of labour energy may be involved. In the case of the more fortunate classes of advanced societies, the problem of the tramp, rather than that of Robinson Crusoe, occurs most frequently. Most of our desires are satisfied by resources that have little immediate connection with effort at all, and which are certainly not acquired proportionally to effort. For the most part, we are distributing resources surplus to primary needs among alternative ends, but as resources are always relatively scarce, any specific end can be attained only at the cost of relinquishing a particular alternative, or by a modification of a group of alternative purposes.

In the last analysis, then, real costs are not entities, ultimate and independent of utility, but the sacrifice of competing demands.

In the cost of production theory, and in the compromise, costs and demands always appeared as forces psychologically different in kind, but, as Wicksteed¹ proves conclusively, there is no fundamental difference between the psychological forces in the minds of the buyers and sellers in the market.

A, for example, attempts to sell his house by auction, but as a rule he places on it a reserve price below which he will not sell. If no one appears with a higher bid, he withdraws it from the market. In other words, he really buys it back at the reserve price. It would be a little misleading to describe the seller as a buyer below a certain point, but so far as his economic effect on the market is concerned, this is what he really is.

It used to be a common custom at auction sales of all kinds for sellers, whose identity was unknown to the crowd, to actually enter into competition, in order to force up the price. This question will be examined more fully in a later chapter on Markets; all that is desired to establish at present is that there is no fundamental distinction between buyers and sellers, *i.e.* the forces of supply and demand, the foundation of the older theories of value. Buyers and sellers are forces of demand operating at different sections of the scale of prices. It is on this ground that Wicksteed has challenged the usual presentation of the curves of supply and demand; and indeed, it follows from what has been said above, that the separate upsloping supply curve gives colour to misleading notions. Wicksteed argues very forcibly, that the separate supply curve is really only a part of the demand curve, isolated and reversed, for the sake of convenience. This is, of course,

¹ *Common Sense of Political Economy*, Vol. II., Ch. 4.

referring to ultimate facts, not to surface phenomena, and this distinction must be kept in mind wherever the argument appears to transcend plain common sense.¹

It is not intended either to suggest a complete identification of buyers and sellers. They differ too widely in outlook and purpose for that. But the psychological differences are, for the most part, differences of degree, and not as was once believed, differences of kind.

Another qualification that should be noticed is that the theory of the supply curve as a disguised demand curve refers primarily to the cases where the supply is fixed. In the case of the long period supply curve the matter is different, but even there it is easy to exaggerate the psychological differences between the forces of demand and supply.

7. The Significance of Costs of Production

Costs of production, even when stated in terms of alternative commodities, though not the primary determinant of value, yet have an economic significance that is very definite and real, and, in an advanced industrial community, this significance can be examined most conveniently through the medium of the monetary expenses incurred by the entrepreneur during the process of production.

All that has been said of the comparative or alternative nature of ultimate costs with respect to the isolated individual applies with equal force, and in precisely the same way, to production in an industrial society, and to the monetary costs of the entrepreneur, for it has been accepted since Ricardo that these expenses have some relation with the real phenomena in the background, though not necessarily to real labour costs.

¹ See Wicksteed: *Common Sense of Political Economy*, Vol. I., Ch. 4; also Knight: *Risk, Uncertainty, and Profit*.

For the entrepreneur, costs are monetary expenses purely; they are the payments necessary to obtain command over the desired quantities of certain types of resources, that is to say, goods and services. Now the obvious significance of these costs lies in the fact that they determine the uses that will be made of any given set of resources.

If resources are relatively scarce, they will command a high price, and a brake will be applied to production, or its course will be deflected into channels in which the resistance of scarcity and high prices is less severe. The final result will be that either production as a whole will be curtailed, or else there will be a relative scarcity of particular products.

Costs, therefore, affect the supply of products, *i.e.* they increase or diminish the relative scarcity of particular products, and for that matter the scarcity of products in general. Resources are always scarce relative to the demand, but there are varying degrees of scarcity, and these resources can be used in alternative ways. Which way is chosen is governed by the demand price of the product relative to the demand prices of the products derived from alternative uses. Incidentally, this explains why the price of any good or service is what it is, and not something else. The reason is that a brake is constantly applied to the application of resources to any specific use, by the fact that there is a demand elsewhere for the scarce products derived from other uses. Very high light is shed on the whole problem of prices and their interdependence by this simple, and on reflection, obvious fact.

Costs therefore affect prices by expanding or curtailing supplies, and in no other way. Whatever disutilities or painful efforts were involved in bringing the productive factors into being is quite irrelevant. They belong to the past. The entrepreneur, and this applies to the private individual, is concerned only with the present and future.

His monetary expenses determine his conduct only to the extent of deciding which and how much of a factor, *i.e.* type of resources, he shall use, and the way he shall use it. This in turn determines the volume of the supply and indirectly the price of the products.

If the demand price for any line of production falls so low that production becomes unprofitable, it is the signal that too great a quantity of productive resources has drifted into that channel and that the supply must be reduced. This is effected by movements of resources to other lines of production where demand prices are high because of the relative scarcity of products. These movements cease as soon as supply of products is in equilibrium with demand at a given price. If the movement is carried too far, the supply of products in the first line of production will fall below the amount demanded; the demand price in that line of production will therefore rise, and the flow of resources will be reversed.

It may seem at first glance that we have landed on ground not far removed from that of the cost of production theorists, for it was a fundamental part of their dogma that costs determined supply, and in turn, supply determined prices.

Nevertheless, the ground though similar, is fundamentally different. It is not costs, however formulated, at least in the old sense, that determine prices, but relative scarcity of products. Costs, as we have shown above, can influence relative scarcity, but only indirectly and secondarily. The ultimate influence governing prices and values is the relative scarcity of products in relation to the demand; how this scarcity is caused, whether naturally or artificially, is a matter of indifference, because the final result is precisely the same. The difference between the causes of the prices and values of fixed supply goods, and freely reproducible goods is one of degree only, and not one of kind as was formerly supposed.

Scarcity, as has been repeatedly emphasised, is a relative term only. It is meaningless except in relation to a demand. At any given moment, the supply of any resources in existence oscillates between a variety of uses, which are in effect a series of competing demands. If the demand estimate of the value of resources required for production in any one of these channels falls below the price necessary to attract the requisite supply to this particular use, future supplies will not be forthcoming; they will be deflected elsewhere.

The determining factor, therefore, is not the entrepreneur's costs, but comes from competing demands. In other words, it is competing demands to which supplies and costs adjust themselves. The only sense in which costs exert any ultimate influence on prices and values is in the sacrifice of alternatives—termed by different writers alternative costs, opportunity costs, and comparative costs, in contradiction to real costs or painful disutilities. But as was shown early in this discussion, these costs are ultimately competing demands. The importance of these conclusions is difficult to over-estimate: as we shall see later, they have a vital connection with the phenomena of markets in general, and with the special problems of rent, interest, and wages, which are only particular aspects of the general law of price.

8. The Distinction between Private and Public Costs

In this chapter the term cost has been used in the sense of cost to the individual, or private cost, but it should be noted that the term cost has another meaning; it can be considered from the standpoint of the community, as well as from that of the individual.

In the conditions in which we live, the interests of the individual and the community do not necessarily coincide. Costs to the individual may be greater or less than costs to the community. A firm may build a factory in a

residential area, and the public may be inconvenienced in various ways—noise, smoke nuisance, depreciation of property or neighbouring building sites, etc. Such a factory may involve the general public in loss greater than the cost of erection to the owner.

The contrary case, however, is by no means uncommon—a railway line that raises the value of all the surrounding land, for example; but when we speak of cost, as a general rule, it is private cost that we have in mind.

9. The Marginal Theory

As neither the cost of production nor the dual theory affords an ultimate explanation of values and prices, we are thus driven back to the marginal theory. It should now be clear that the commonplace of the older books, viz that the criticisms of the new school had an immense influence on Economics but the attempt to overturn the classical system and rebuild the subject on a totally new foundation failed because the old system was based on essential truths in obvious accord with experience, and that the new contribution has been explanatory rather than destructive, has no solid foundation.

This argument rests largely on a misunderstanding of the theory. It has often been urged that, whereas marginal valuations are subjective only, exchange values are fixed objectively; hence price bears no simple relation to the desires of those who buy a particular commodity; two men may pay identical prices for similar goods, but they are not likely to derive identical satisfactions from their purchases.

But the marginal theory in its modern form makes no such assumption. It is not contended that price measures equal satisfactions between two individuals; such satisfactions cannot be measured. Value is purely a relative term, and the fact that men are willing to pay the same price for a commodity only indicates that the good in

question occupies the same relative position on their scales of preference if they are marginal buyers; on the other hand, should one of the purchasers be above the margin on the demand scale, he will purchase the commodity at a lower price than he would be prepared to offer, if necessary, and he will have a surplus of satisfaction in agreement with the marginal theory. Whether we look at costs or commodity prices, it is not objective but subjective valuation that is the governing factor.

From what has been said already, the so-called paradoxes of value need no explanation. Air and sunlight are useful, but not valuable in an economic sense. Water in the Sahara desert is objectively the same as in the English Fens, but in the former case it is "valuable" and in the latter it is certainly not, though its usefulness in the latter place is undoubted. If the stock of fen water were suddenly limited it might acquire "value," even though its total usefulness were lessened; all "valuable" goods would lose "value" if sufficiently increased in quantity; scarcity is an essential factor in "value."

This paradox of value is further illustrated in the case of diamonds, but the peculiarity of the high exchange value of diamonds does not stand alone. Necessaries rarely possess a high "value," and luxuries often possess a higher "value" than either necessities or comforts. The mystery disappears when we remember that the second element in "value" is scarcity. Diamonds are "valuable" because the eager demand for them has led to the appropriation of all available stores, leaving many wants unsatisfied, and the intensity of these wants has led to a high communal valuation of diamonds. Bread is cheap because the desire for food is soon sated, and there is enough corn to satisfy most of the demands for flour; there is some limitation, for some men are almost starving, others could eat more than they can now afford, while there are many new uses to which corn could be put if

the limitation were completely removed. Yet it is true, generally speaking, that the unsatisfied desires for diamonds are more urgent than for bread, assuming, as we must in Pure Economics, that the moral factor is not considered; economists may realise that such conditions are unjust, but must deal faithfully with the appointed material and face the actual facts.

A nation of poor men living on bare necessities would regard ordinary foods as of high "value"; soldiers on active service sometimes find that food, drink, or shelter are more essentially "valuable" to them than gold. Yet, most civilised men hardly know the meaning of hunger and thirst; to them the knowledge that under certain unlikely conditions they will be dependent on a certain definite supply of food does not raise the "value" of present supplies; they know that if a certain article of food is lost, it can be easily, quickly, and cheaply replaced. The scale of "value" of an indigent man might run from necessities down to luxuries; that of a normal civilised man of normal means emphatically diverges from such a scale. To a starving man the "value" of food may be taken as very great, but under actual conditions the average man would prefer a book or newspaper to an excessive supply of bread; he feels an urgent desire to know the latest news, but little or none for much plain food.

Lingering doubts as to the paradox of value will now disappear. Water is little valued because the stock is so great that all possible uses are served; sometimes it is used so as to give barely any satisfaction, *i.e.* the marginal utility is zero. Diamonds are "valuable" because the least satisfaction given from any actual use is so great that the owner will pay a considerable sum for it; demand is great and stock is limited, so that marginal utility is high.

We have used the terms value and price in this chapter as if they were interchangeable, and for most practical purposes this can be accepted. The question of whether

value and price are identical is an old controversy, and there are economists, Cassel for example, who would banish the term value from the subject altogether.

It is necessary, however, to preserve a distinction for two reasons. In the first place, while every economic good has both value and a price in a monetary exchange economy, the principles of Economics are of universal application and transcend the limits of any specific form of society. An economic good must have value, but in certain circumstances it need not have a monetary price. Even under a monetary economy, however, the concept value is wider than the concept price. Value really measures the relative position of a good on a scale of preferences, and this position is fixed by competing demands. In the absence of frictions, marginal values do coincide with marginal prices, but that is because marginal values determine marginal prices.

In Chapter II. it was stated that the marginal position of any good on this scale was determined by prices, but the apparent inconsistency is easily explained away. At any given moment, to the individual entering the shop and the market, prices do appear to be fixed externally; hence one is tempted to say that market prices fix values; that is, they determine the position of a good on scales of preference. The key to the solution has already been given in the section dealing with the significance of entrepreneur costs, where it was shown that prices of productive resources are decided by the competing demands of alternative uses. In a later chapter on markets, it will be shown conclusively that commodity prices, which appear to the individual buyer to be externally fixed, are really fixed to a small extent by the individual buyer, but mainly by the demand of the buyers considered collectively. Ultimately, values determine prices, but as in the absence of frictions they coincide, they are often indistinguishable and no serious practical error arises from a mixing of the terms.

Theoretically, however, a distinction must be maintained if we wish to reach ultimate explanations of things.

It should also be noticed that price measures the value of the marginal unit only, and as we shall show later, there can be only one price for the same class of article on the same market at the same time; hence units of a commodity that satisfy wants higher up the scale of preferences have a surplus of value over their price. It was from this fact that arose the notion of consumers' surplus. Ultimately, then, value has a rather wider connotation than price.

10. Further Observations on the Value Controversy

That the marginal theory is not the abstract unreality so often contended by opponents is proved by the fact that it is the only rational explanation of the origins of all economic activity, that is to say of the administration of the resources of the household; but it accords equally well with the history of the economic development of the nineteenth century.

The relative scarcity of resources with respect to ends is too obvious a fact ever to have escaped notice, but the possibilities of relieving this scarcity have varied, and do vary, from time to time and from place to place. In this respect, savages are simply creatures of physical circumstances; and even in England, down to the middle of the eighteenth century, the progress made was relatively small.

Then came the Industrial Revolution and a mechanised production, but it is very easy to exaggerate the rate of progress between 1760 and 1860. It is true that during this period goods were manufactured on a scale that must have appeared miraculous in comparison with previous periods; but it is just as true that productive resources, during the transition period, increased in scarcity relative to the potential demand. It was not an accident that Senior formulated the abstinence theory of capital and

interest in the first half of the nineteenth century, and there seems no reason to doubt that this explanation had a close relation to the facts of the time. The steam engine and machinery came into use very slowly because of the technical difficulties of construction, lack of trained mechanics, machine tools, and so on. Methods changed slowly at first; fixed capital was costly and difficult to replace.

It was not unnatural, therefore, that the painful aspect of labour efforts should have captured the imagination, and that costs should have assumed an air of fixity to which demand as a variable term must conform.

Since the days of Jevons, the position has changed fundamentally. Science has been applied consistently to the problems of production, and whatever changes may occur in the future, the peculiar problems of the early stages of the Industrial Revolution are not likely to be repeated. This does not mean that the problem of relative scarcity has been solved, but only that the content of it has been changed. Technical progress has revolutionised the conditions of supply; methods are continually changing and machinery is continually being scrapped, all with a view to reducing the expenses of production in order to tempt lower levels of demand. It is not altogether an accident that the marginal theory gained a foothold in America before it was accepted in the countries where it was first formulated.

The most striking phenomenon of the motor industry during the last twenty-five years has been the progressive cheapening of the car. Now on the old cost of production theory this would be attributed solely to improved methods of production which have decreased costs, and in this way have lowered the selling price. Of course, it is true that if costs had remained at a high level, selling prices could not have fallen, but this explanation places the emphasis at the wrong end. It is the potential demand that has

caused producers to constantly seek new and cheaper methods of production; and this is only a roundabout way of stating that it is costs that gradually adjust themselves to demand, and not demand to costs.

There is a limit to the power of demand to force expenses of production downwards, and this point will be analysed fully in the chapter on markets, but the brake on falling prices is not applied through the force of real costs, but because of the scarcity of resources in relation to competing demands.

In a society organised on the foundations of a high level of economic, social, and technical culture, and in which ample resources of primary productive factors have been accumulated, the workings out of the forces of demand are clearly apparent, but in the England of Ricardo's generation, circumstances of a transitory nature cast a veil over the action of these forces at the point of the industrial field to which attention was naturally directed—the production of machine-manufactured goods; hence a false impression was created even in the minds of men of undoubted genius living in that age.

11. The Present Position of Value

As a summary of the preceding sections we can say that value depends in the first instance on demand, or, more accurately, on demand in relation to the supply. In the case of freely reproducible commodities their values in the long run are derived from the values of the factors of production which enter into their manufacture, and the values of these factors are governed by their scarcity, not in any absolute sense, but relative to the demands for their use. No factor of production, nor any finished commodity for that matter, can have any value unless the supply of it falls short of the demand.

If, however, the supply of it is less than can be profitably employed, the value that will be put on it will be

sufficiently high to restrict its use to the most important ends. Throughout the whole field of industry, entrepreneurs in different lines of production compete for supplies of these factors, and this competition, by restricting the supply of factors to any particular purpose, governs the value of products by limiting the supply relative to the demand for them. The larger the supply of any specific product relative to the demand for it, the smaller will be its value, and, incidentally, the lower will be the returns yielded by the factor or factors of production. It follows, therefore, that marginal movements of productive resources are continually being made until they are so distributed between competing uses that the maximum returns per unit are obtained.

To put the matter as briefly as possible, the relative values of different products are determined by the relative scarcity of the factors of production.

12. The Function of Price in the Economic System

Up to the present we have limited the discussion to general, if fundamental, matters. In the concrete world, every economic good and service commands a money price. The question therefore arises, what is the function of price in the economic system?

A Dictator could possibly decree which goods and how much of each should be produced, and the quantity to be allotted to each individual; but in a competitive society, this distribution of resources is effected by the agency of price. If too little of commodity *A*, and too much of commodity *B* is being produced, the demand price for *A* rises, and that of *B* falls. The signal is thus given to the productive system to make the necessary adjustments, and if competition were perfect these adjustments would continue until marginal significance and price were equal.

It should be carefully noted that the prices of all goods and services form an interrelated system; what we are

prepared to pay for *A* depends on the terms on which we can obtain *B*, *C*, *D*, etc. In other words, all prices are mutually determined.

13. Demand, Supply, and Price

The price of any commodity must be such as will tend to equate demand and supply. Price acts both on the side of supply and demand. A rise in price tends to restrict demand and to increase the supply of any commodity offered for sale; conversely, a fall in price tends to increase demand, and to restrict the supply offered in the market. These movements, due to price changes, tend to establish an equilibrium between demand and supply.

Demand and supply with respect to any commodity are continually changing. The factors that cause changes in demand have been noted already, but the factors that cause the supply of any commodity to change are not less important. In the first place, the supply of any commodity may be reduced simply because some proportion of the factors of production that were employed in producing it have been diverted to other lines of production. If other things remain equal, a decrease in the supply of one commodity tends to be accompanied by an increase in the supply of some other commodity.

But other things do not remain equal. Technical progress makes possible new methods of production by means of which unit costs can be lowered if a larger supply is produced. The supply of any commodity may therefore increase when the demand price for the commodity remains constant, or even falls.

Technical progress also makes it possible to increase the supply of more than one commodity at the same time. Speaking generally, new inventions and methods economise the use of factors of production; this has the same effect as an increase in their supply. When technical progress is

taking place, an increase in the supply of one commodity does not necessarily mean a decrease in the supply of some other commodity.

14. The Long Period Supply Curve

Both demand and supply have different meanings according to the length of time under consideration, but the time factor has a special significance in relation to supply.

Marshall distinguishes four categories of supply—(1) the very short or market period when the supply is fixed; (2) the short period of a few months, or a year, when supply means what can be produced with the existing resources of production at work; (3) the moderately long period of several years when supply can be taken to mean the goods that can be produced at a given price, not only by the existing factors of production, but also by the expansion of such productive factors as can be profitably set to work before the expiration of the period; (4) and finally, the very gradual changes in supply that take place from one generation to another on account of technical progress, changes in population, the growth of capital, and the changing conditions of demand.

But as Marshall points out, the division between short and long periods is a little arbitrary, and a line of division cannot be rigidly drawn. In respect to an increase of supply it is obvious that a short or long period cannot be definitely considered without reference to the industry in question. Certain forms of production require a combination of skilled labour and machinery, and in many cases while the supply of machinery can be readily increased, new supplies of skilled labour can be trained only slowly. What constitutes a short and a long period, therefore, varies from industry to industry.

At any point of time, what the sellers will offer and what the buyers will take depends upon prices, and it should be noticed that the sellers will offer more at a higher price,

because the higher the price is, the less is the probability of a further rise. Similarly, buyers will take more at a low price, because the lower the price offer is, the less is the likelihood of a further fall. At any moment of time prices are less influenced by the demand for immediate consumption than might be supposed at first thought. In most cases they are determined by opinions on the probable course of prices in the near future.

In the longer period the supply will not be increased, or even maintained, unless the demand price is such that production can be undertaken on profitable terms, for otherwise there will be a tendency for factors of production to transfer themselves to other and more profitable employments. To what extent this will take place will depend on the alternative openings possible. In the case of factors highly specialised in one line of production a change is often difficult, and production may continue until the existing plant wears out. One thing, however, is certain, and that is that existing factors will not be replaced and new ones will not be attracted into an industry in which the demand price for products is such that profits are non-existent, or below what could be earned elsewhere.

If technical conditions remain constant the long period supply curve for any commodity will slope upwards, that is to say, that an increased supply will only be forthcoming if the demand price rises, because as supply increases, each unit of it will be produced at a greater cost. The reason for that is that as production expands the increased demand for the relatively scarce factors of production raises their price, and in consequence, the price of their product. It is true that this tendency may be offset in some cases if a larger scale of production makes it profitable to make use of factors that could not be properly used before. It is possible, for example, for the rising prices of the factors of production to be offset by the fall in the costs of transporting the raw materials to the factory, and

the finished products to the market, as the means of transport are more fully used. Even in cases like these, however, in the long run the supply curve must slope upwards again.

In many cases, of course, the long period supply curve does slope downwards because the technique of production is continually changing, but in the majority of such cases the down-slope is not due directly to the scale of production, but to the fact that new inventions, and technical methods, effect great economies in the uses of factors of production. Throughout the economic system an increasing struggle is maintained between the scarcity of means of production on the one hand, and the economies made possible by technical progress on the other hand. As the balance of advantage inclines to one side the supply curve tends to slope upwards; as it inclines to the other side the supply curve tends to slope downwards.

15. Recent Advances in the Marginal Theory

It will probably have been noticed that the term significance has replaced that of utility usually in this chapter, and it is now necessary, therefore, to explain the meaning of the substitution. The marginal theory as expounded by Jevons, Walras, and Menger was a theory of marginal utility, and so far as the fundamental principles of value are concerned nothing has transpired since to shake their views. Utility is undoubtedly a fundamental factor in demand, and it is a self-evident proposition that the utility of any factor of production, service, or commodity is inversely proportional to its supply.

But although we can explain value quite satisfactorily in general terms by the aid of marginal utility, yet if we wish to aim at scientific precision one difficulty stands in the way, and that is the difficulty of quantitative measurement of utility.

Speaking broadly, most economists from Jevons to Marshall assumed that utility can be theoretically measured,

and it is true that if we could reach an equation of total utility with mathematical precision, then marginal utility could be determined exactly by the application of the first principles of the differential calculus, as in the example given in the last chapter.

But if total utility cannot be measured neither can marginal utility except in a vague and indeterminate sense, and although the methods of Jevons may be approximate enough to establish a general principle, modern scientific thought requires greater exactness.

Utility is, of course, a psychological sensation, and the general opinion seems to be that psychological phenomena cannot be measured quantitatively with any degree of precision. It is for this reason that Professor Knight has rejected the theorem of consumers' surplus. We can say of two sensations that one is larger or stronger than another, but not by any definite quantity. But if we cannot measure the quantitative difference between two utilities, we can yet say that one is greater than another; or in other words, we can arrange them in a definite order. We can say of the utilities a, b, c, d that $a > b > c > d$, even if we cannot estimate the exact difference between them, and it was for this reason that Pareto and Wicksteed introduced into economic theory the concept of the relative scale of preferences. Wicksteed discusses the principles of margins at very great length, but it is always in terms of the significance for human behaviour of a slight increase or decrease in the supply of any specific commodity. It is true that in his exposition of the significance of changes at the margins, an increase of utility is always the driving force, but it is equally true to say that with respect to problems of value he reached the conclusions of Jevons by a different route.

Speaking broadly, the emphasis was shifted by Pareto and Wicksteed from utility to substitution, and the moment we take as starting point of the subject the

principle of scarcity of means in relation to ends, the importance of substitution is evident, for with its help relatively scarce factors can be rendered less scarce. As a general rule, unlike factors cannot be substituted one for the other in totality, but they can at the margin. Wherever a product results from a combination of factors, these factors can be varied almost indefinitely at the margin without affecting the result. In agriculture, to take an obvious and familiar example, up to a certain point, machines can replace labour and both can be used as substitutes for land, while manures can be substituted for both land and labour; and what applies to agriculture applies to every phase of activity.

Contemporary economists¹ claim, therefore, that the concept of diminishing marginal utility can be replaced with advantage by that of increasing marginal substitution.

The marginal rate of substitution of any factor *A* for any other factor *B* is clearly the quantity of *A* that will just balance the loss of a marginal unit of *B*, for it is self-evident that, if the owner of *B* received more or less of *A*, his sum total of satisfaction would have changed. But we need not necessarily stop at the substitution of *A* for one marginal unit of *B*; we can continue the process and replace the new marginal unit of *B* with the requisite quantity of *A*, and as the second unit of *B* is a unit higher up the relative scale, it follows that an increased quantity of *A* will be necessary to balance its loss; or, in other words, the further we carry the process of substituting *A* for *B*, the higher will be the marginal rate of substitution of *A* for *B*.

It should be noticed that although we generally reserve the term substitution for the cases where the two resources are owned by the same party, and use the term exchange for the cases in which each resource has a separate owner,

¹ Dr. Hicks: *Economica*, Feb. 1934. See also Wicksteed, Vol. I., Ch. IX.

yet every exchange, whether direct or indirect through the medium of money, is an act of substitution. As soon as we consider substitution from the point of view of the market it is clear that an individual can only be in equilibrium with respect to the system of prices in operation at any one moment if the ratio of the prices of any two goods equals his marginal rate of substitution between them; for otherwise, at that particular market rate it would be to his advantage to substitute a portion of one good for an equal value of the other.

But for the principle of the marginal rate of substitution to have any practical application to a theory of value a method of measuring it is necessary, and for that purpose a new concept has been introduced into economic science by Dr. Hicks,¹ a concept, too, which more recently has been made use of by other economists²—the elasticity of substitution. By means of this index it is possible to measure the rate at which marginal substitution between any two given resources is increasing, just as proportional changes in supply and demand curves are measured by elasticities of supply and demand; and it should be remembered that one of the advantages claimed for the principle of increasing marginal substitution over that of diminishing marginal utility is that the former can be quantitatively measured and the latter cannot, at least in a practical sense. But before developing this matter further it will be necessary to introduce another definition which until recently has been confined to mathematical economics, that is to say the notion of indifference curves.

16. Indifference Curves

A curve of indifference, which arises out of the notion of the relative scale of preferences, was defined by Professor Edgeworth as the locus of all exchanges (or substitutions)

¹ Hicks: *Theory of Wages*, p. 117.

² Robinson: *Economics of Imperfect Competition*.

of one commodity for another which give to the individual the same satisfaction.¹ The following simple diagram (Fig. 2) will make the matter clear. Let us suppose that *A* and *B* are prepared to exchange apples against pears.

At the point *x*, *oy* apples can be exchanged for *xy* pears, and at the point *u*, *ov* apples can be exchanged for *uv* pears; and *A* will obtain the same satisfaction in either event. The fact that the curve passes through the point

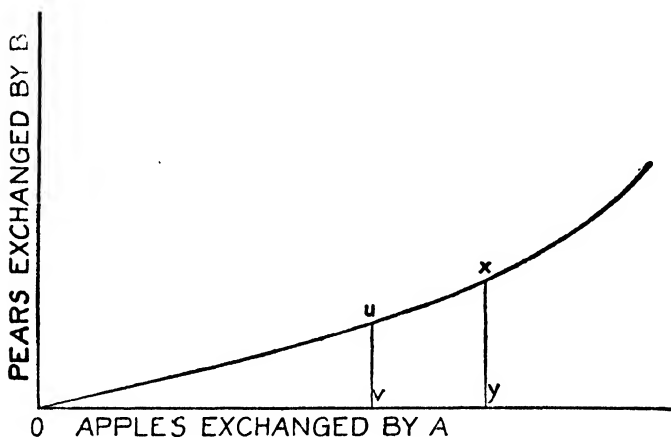


Fig. 2.

O signifies that it is a matter of indifference to *A* whether he makes the exchanges at *u*, or *x*, or none at all.

In the above example *A* is really concerned with one consumers' good, but in the case of two goods complications begin. Let us suppose that *A* is considering various combinations possible of two goods *X* and *Y*. Now the total utility he will derive from combinations of these goods depends on the amounts he possesses of them, and in simple non-mathematical terms the total utility so

¹ Edgeworth: *Collected Papers*, Vol. 2.

gained may be pictured in the form of a hill¹ with varying levels, on every point of which the utility is the same, even if we cannot quantitatively measure it. (We can, however, say that one level is higher or lower than another.)

If we project these levels on to a horizontal plane we get a series of contour lines as in a physical geography

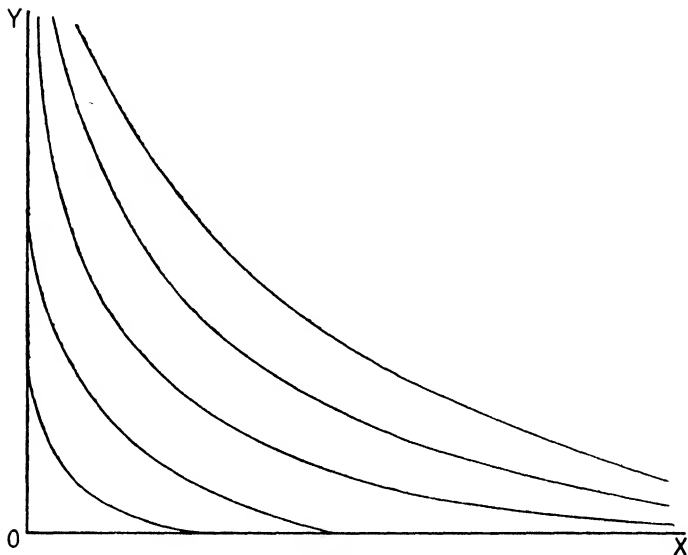


Fig. 3.

map, and indeed some American writers use the term contours for curves of indifference. Every point on each of these curves represents a combination of X and Y of equal utility to the individual; the curve nearest the co-ordinates represents the lowest level of utility, the next curve inwards a higher level of utility, and so on, until we

¹ In the case of more than two goods, spaces of more than three dimensions would be required.

reach the peak of the hill. At this point the total utility is at a maximum, and the marginal utility of each good is zero.¹

The above brief description is introductory only, and is very incomplete. All that is intended is to present a first notion of the subject. In most applications of the

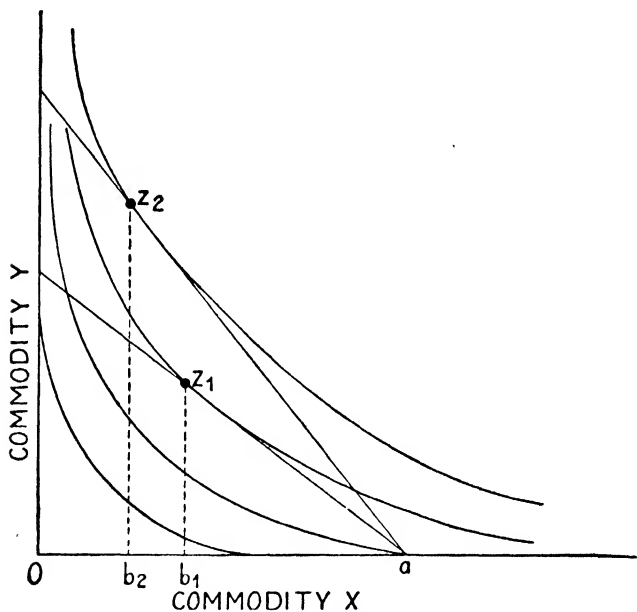


Fig. 4.

system, the demand of the individual for goods on the market, for example, only a small portion of the curves will be required. For most practical purposes, therefore, an indifference diagram or map will take the form given in Fig. 3.

¹ See the mathematical example given in Ch. 2.

The simplified example given in Fig. 4 will illustrate a simple use of indifference curves. The owner of commodity x is exchanging a part of it against commodity y . The straight lines az_1 and az_2 are tangents at points z_1 and z_2 to two indifference curves, and the slope of these lines represents the given rates of exchange.

The owner of x will find an equilibrium position by exchanging ab_1 of x for z_1b_1 of y and by retaining ob_1 of x . It should be noticed that z_1 is the point where the rate-of-exchange line touches the highest possible indifference curve, under the assumed conditions, and therefore gives the owner of x the maximum satisfaction.

A more advantageous rate of exchange would be the exchange line az_2 giving a new point of equilibrium at z_2 . There a larger quantity of x , ab_2 would be exchanged for a larger quantity of y , z_2b_2 , and the owner of x would retain a smaller quantity of it, ob_2 . The new point of equilibrium, however, would give a larger total utility, because the line az_2 touches a higher indifference curve.

17. Elasticity of Substitution

We are now in a position to refer once more to the concept introduced on a previous page—the elasticity of substitution. The elasticity of substitution is defined by Dr. Hicks in his *Theory of Wages* as a measure of the ease with which a varying factor can be substituted for others. At one extreme, where the factors are always used in fixed proportions, the elasticity of substitution will be zero. At the other extreme, where the factors are perfect substitutes, the elasticity of substitution will be infinite. In most cases, however, the degree of elasticity will fall between these two extremes.

If we turn again to the indifference map used to illustrate a simple exchange operation, and replace the term rate of exchange by that of marginal rate of substitution, we can then say that the slopes of the tangents az_1 and az_2 to

the two indifference curves measures the marginal rates of substitution at the points z_1 and z_2 respectively. At z_1 , for example, the quantity of x that a unit of y will replace is equal to $\frac{b_1 a}{b_1 z_1}$; and similarly, the quantity of y that a unit of x will replace is given by $\frac{b_1 z_1}{b_1 a}$ at the same point.

Now the ratio between the factors x and y at the point z_1 is $\frac{ob_1}{b_1 z_1}$, and if we divide the relative change in this ratio by the relative increase in the marginal rate of substitution when a small amount of x is substituted for y , we get the elasticity of substitution of x for y at the point z_1 . Conversely, of course, if we divide the relative increase in the ratio of y to x , i.e. $\frac{b_1 z_1}{ob_1}$, by the relative increase in the marginal rate of substitution of y for x when a small amount of y is substituted for x , we shall obtain the elasticity of substitution of y for x at the point z_1 .

Mr. A. P. Lerner has devised a simple diagrammatic method by means of which the elasticity of any point on the curve may be readily found. If a curve is constructed which measures the ratio between the two factors along the "vertical" axis, and the marginal rate of substitution along the "horizontal" axis, the elasticity of this curve will measure the elasticity of substitution of x for y or y for x , according to the object in view, at any desired point.¹

The elasticity of substitution, however, measures one kind of change only, that is to say it measures the effects of changing our position from one point to another along the same indifference curve, or in other words, the effects of the substitution of one commodity for another. But the individual's relation to one indifference curve is not

¹ The method is worked out in *Review of Economic Studies*, October, 1933.

constant; in actual life he moves continually from one indifference curve to another in accordance with changes in his income and changes in the system of prices ruling the market. An individual's demand for x and y is obviously affected by changes in the price of x and y (and in the price of other goods too, in concrete cases), and by changes in his income.

The relations between the curves can be shown by what Dr. Hicks calls an expenditure curve, which he obtains as follows:—If we start with the tangent az_1 to the point z_1 on the indifference curve shown in the map, and draw a series of lines parallel to az_1 and tangential to the other curves, the curve through these points is an expenditure curve. Now the property expressed by an expenditure curve is conveniently measured by what Dr. Hicks calls the income elasticity of demand for x , or for y which is the (relative increase in the demand for x) divided by (the relative increase in income) when income has been increased by a small amount and the prices of x and y have remained unchanged.

The elasticity of substitution of x for y or y for x and the income elasticity of demand for x or for y describe the main characteristics of the individual's scale of preferences round any particular point.¹

This brief and very simplified account of the modern restatement of value theory is introductory only. It illustrates the point that has been made by Professor Robbins that economic theory is growing very technical in character, and that the time is fast coming when it will be difficult, if not impossible, to read any but rudimentary work without specialised training, and indeed, it may be added, without some mathematical knowledge.

Incomplete as the above description is, it should emphasise to the reader with some acquaintance with the

¹ See *Restatement of the Theory of Value* by Dr. Hicks, *Economica*, Feb., 1934.

elements of the subject that, with respect to English writers, modern marginal theory follows Wicksteed much more closely than Jevons.

Having established the first principles of the subject, our second task will be to follow their application to the various phases of Economic theory. The next few chapters will therefore be devoted to a consideration of the factors of production, first separately, for the sake of convenience, and afterwards certain consequences arising from their co-operation.

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CHAPTER IV

AGENTS OF PRODUCTION—LAND

1. Classification of the Factors of Production

Until recent years, it was the accepted custom to divide the matter of the subject into a theory of production, and a theory of distribution. Some objections against this procedure have been noted elsewhere,¹ not the least of which was the tendency to include within the theory of production a good deal of matter that is technological rather than economic in a strict sense. Fundamentally, a theory of production is as much a question of the economical distribution of resources as a theory of consumption; production is only an element in the relating of means to ends.

The long accepted tradition has been to apportion the process of production between three factors or agents, land, labour, and capital, to which was subsequently added a fourth—organisation. The historical reason for this extension was the felt inadequacy of the original classification as the specialisation of processes and functions developed; to which might be added the political necessity of refuting the theories of Karl Marx.

The classification of land, labour, and capital is, however, a technological rather than an economic one. However widely these factors may differ from each other, the differences are mainly differences of origin and physical nature; economically, they differ in degree rather than in kind, and for that reason certain economists have challenged the old classification in recent years².

¹ See Chap. I.

² See Knight: *Risk, Uncertainty, and Profit*.
Davenport: *Economics of Enterprise*.

Wicksteed: *Common Sense of Political Economy*.

2. Criticism of the Traditional Classification

Criticism is directed at various points. In the first place it is objected that none of these factors are homogeneous quantities; each is capable of minute subdivisions, and to a considerable extent, each may replace the other.

Even within each category there are numerous grades of land, labour and capital which even on technological grounds cannot be reduced to a common denominator. The work of a railway booking clerk differs more fundamentally from that of a carter or drayman than the work of these men differs from that of a steam engine. It follows, therefore, that any fundamental economic advantage derived from differentiating between labour and capital would apply with equal force to a differentiation between the various kinds of labour, and capital.¹ Davenport also points out that there are difficulties in the way of distributing satisfactorily all the outlays of the entrepreneur within the classification of interest, wages, and profits.² It would be more accurate, therefore, to speak of an infinite number of factors rather than several broad categories.

Perhaps even more important is the criticism directed against the traditional distinction between land and capital which has occupied so vital a place in English economic theory since the days of Ricardo.

It was necessary to Ricardo's labour theory of value to eliminate land rent from prices of products; hence land was placed in a separate category on two grounds—(1) land is limited in quantity; (2) the products of land are raised in accordance with a law that differs in kind from the law of industrial enterprise. To these primary arguments, subsidiary ones have been added at various times,

¹ See Carver: *Distribution of Wealth*, p. 85.

² Davenport: *Economics of Enterprise*, pp. 160, 414.

such as that land is a gift of nature, while capital has its origin in labour; also that income from land follows a special law, tending to increase with the development of civilisation, while for the same reason, income from capital tends to fall.

The economic grounds for this distinction are quite superficial. Land is limited in no sense that does not apply to matter in general; indeed, in the economic sense, land is continually being made by reclamation, by improvements, and by developments of transport. From the standpoint of food supplies and raw materials, English economic land is world-wide.

The laws of returns will be discussed later, where it will be shown that it is quite misleading to suppose, as Malthus and Ricardo did, that while production obeys one law in agriculture, it raises industrial products on totally different terms. The origins of the categories have nothing whatever to do with their economic functions, and experience has falsified the early nineteenth century hypothesis that, with the progress of civilisation, land rent must increase and the rate of interest on capital decline.

It is true that in certain times and places, these items do vary inversely, but where this is so it is solely a consequence of the relative scarcity, for the time being, of the products on the prices of which these payments depend. It is not a consequence of any ultimate economic difference between land and capital.¹

In a similar manner it is easy to exaggerate the special peculiarities of labour. Such as exist, refer rather to origins than to economic significance. It is often argued that while there is land so poor in quality as to be practically no-rent land, there is no such thing as wageless labour. But this is contrary to experience. As Cassel has pointed

¹ See Davenport: *Economics of Enterprise*.

out,¹ while there is a very large number of human labourers, the quantity of employable labour is relatively scarce; indeed, except under the abnormal conditions of the war years, there is always a residue, more or less large, of wageless labour in an economic sense.² Again, it is misleading to contrast land and capital goods with labour on the ground that the former are passive, while labour is active. Labour, as distinct from organisation, is directed as much as land and machinery. Even if these distinctions could be satisfactorily established, no real advantage is gained unless it could be proved that these different factors are renumeralated according to different principles, as indeed was believed by the early economists. Any such belief, however, is inconsistent with the first principles from which we started.

In production, then, the only positive agent is the entrepreneur in some form or other. Land, labour, and capital are merely a heterogeneous mass of resources, by means of which he attains certain ends in the most economical manner possible.

There is another point, too, that must not be overlooked in this connection, and that is the possibility of substituting any factor for another in the same group. Every business undertaking requires resources of land, buildings, labour, machinery and raw materials, etc., and it is, of course, true to say that within the limits of a group no one factor can wholly take the place of one of the others.

Machinery, for example, cannot be used as a substitute for buildings; organisation cannot wholly replace manual labour; certain raw materials are always necessary, and so are a minimum of certain types of skill and land.

On the other hand, it is equally true to assert that up to a point, resources which superficially are most diverse

¹ Cassel: *Theory of Social Economy*. Cannan: *Economist's Protest*.

² Knight: *Risk, Uncertainty, and Profit*. Carver: *Distribution of Wealth*.

can be substituted for each other at the margins, and thus for productive purposes can be reduced to a common denomination. No carpenter could make a piece of furniture without wood, but an intelligent and skilful workman could do the job with much less waste of material than another carpenter, less intelligent and less skilful. In other words, within limits, skill can replace raw materials, and conversely, raw materials can replace skill. This alternative might conceivably happen where raw materials were abundant and cheap, and skilled labour relatively scarce and dear.

The above consideration applies equally to agriculture. Land, labour, and machinery can be substituted for each other at their margins. On a given area of land, the same crop can be produced by using less labour and more machinery as by using less machinery and more labour; and again, by using more labour and more machinery the area of land can be reduced without diminishing the size of the crop.

This principle can readily be extended to every department of production. A slight increase of one factor may just balance a slight decrease in another in the sense of giving the same result whichever alternative is adopted. Changes in the supply of factors will, of course, affect their marginal significances because of the consequent changes in their relative prices, but whatever the market prices of these factors may be, the entrepreneur will adjust his demand for them until their marginal significances are identical with their prices.

The natural tendency, therefore, is to group the factors of production in such a way that, at their margins, each unit is a perfect substitute for any other unit in that group.

A word may also be said respecting an entirely different classification that is creeping into use¹—the division between

¹ At least in English textbooks. Wieser makes an extensive use of this distinction in *Social Economics* and in *Natural Value*.

relatively specific, and relatively non-specific goods. Relatively specific goods are producers' goods that can be used in only one or two stages of production, and partly manufactured goods which can only be turned into finished goods by passing through a definite number of further stages of production. Non-specific goods can be used in most stages of production—non-specialised implements and raw materials.

Wieser considers the matter from a wider point of view. He classes all productive means into cost productive means and specific productive means. Cost productive means he defines generally as labour and capital, and gives land as the typical case of specific productive means. More particularly, he explains specific productive means as productive factors that are only important for one purpose. He cites the case of a mineral spring remedial in a particular disease as an instance of scarce specific means, and cinchona bark, whose only economic use is in the manufacture of quinine, as a non-fixed supply specific producer's good.

Cost means, on the other hand, can be used in alternative purposes. Labour and capital can be used for an unlimited number of ends so that when they are relatively scarce, as in a broad sense they are, the question of alternative costs always enters into their use. This is why Wieser defines all means of production that can be used generally for any purpose as cost means. Conversely, he claims that specific means of production lack the characteristic of cost, and on the definition of cost as defined in the last chapter, no alternative cost can enter into the use of either the spring water or the cinchona bark.

Wieser includes agricultural land generally among the specific productive means: he argues that, in a new country where fertile land is still so abundant that only the best tracts are cultivated, that land has not the character of a cost means, though agricultural capital has.

Now the distinction raises several important and still controversial points. It apparently contradicts much of what has been said in the last chapter, and certainly places land in a separate category from labour and capital, even with respect to economic functions. We have not yet reached the stage at which the problem of the distribution of the product between the factors can be discussed with advantage, but it is not difficult to see that the question of distribution between costs and distribution between surpluses is involved. Rent of agricultural land thus appears excluded from cost elements and remains as a price determined surplus, and the same applies to the profits of the entrepreneur, for Wieser seems to regard him as a specific factor.

As these matters will be developed in later chapters on different lines, it is as well to emphasise here that the contradiction can be explained away without serious difficulty.

It is obvious that some factors have a greater specific character than others. In new countries where land is practically wholly agricultural and where circumstances confine its use to mainly a particular crop, it has a highly specific character. But when a country is wholly settled, this specific character loses most of its strength, at any rate over a long period. Except in a short period, most land in a country like England is competed for by alternative uses, so that from this point of view, the difference between land, labour, and capital is one of degree merely. Indeed, just as land loses its purely specific character, so do capital and labour their purely non-specific character.

In primitive times labour was almost purely non-specific as it was not specialised. Even to-day, certain forms of manual labour are highly non-specific—an agricultural labourer may become a bricklayer's labourer, and many people manage to change into very diverse occupations, but such movements are exceptional and not the rule.

As it becomes highly specialised, labour tends to lose its non-specific character, and the same applies to capital goods. The distinction therefore applies less to the broad categories than to the subdivisions of each class, but even here the distinction is not rigid in a permanent sense. A factor acquires and loses specific and non-specific tendencies with changes in external conditions. In other words, differences tend to be of degree and temporary, rather than of kind and permanent.

As the distinction elaborated by Wieser has a bearing on several matters that will be considered later, it should be carefully noted.

But although the traditional classification is arbitrary and of no real economic significance, it is convenient to treat them as distinct, and to consider them in isolation for the purpose of an elementary analysis. We shall therefore examine the main features of land, labour, capital, and organisation, beginning first with land.

3. Production involves Man and External Nature

The direct gifts of nature satisfy a very small proportion of human desires, and man is compelled to produce wealth to eke out the insufficiency of free goods. Supply is correlative to demand; for the present it is enough to say that every property of demand corresponds to a similar or related property of supply. The mutual relation of demand and supply enters into the theory of value, but in the present chapters, production alone will be considered, and consumption will be taken largely for granted.

Production involves man and external nature; man supplies the necessary direction, while nature provides matter and energy. Some think that not a single particle of the earth's crust is incapable of supplying a want, but, taking consumption as it exists, matter is not usually in a state in which it can satisfy man's desires most effectively. Sometimes the direct gifts of nature may be moulded by

human handiwork into satisfying forms, by means of Labour, but, as a rule, nature's further aid is required in the form of energy.

Nature is not a mere help to labour: it sets limits to all production. Man has learnt to dominate the earth in the sense that the good gifts of nature have been effectively utilised, but it must be noted carefully that he is bound and limited by that very fact; production implies a dependence on nature. In particular, man has always looked on land as the source of his goods, and his productive energy is guided largely by the character of the land that he controls. Land is not the only gift of nature, but it so far impresses men's minds that economists have taken it as a type of the various methods in which nature lends her aid. In economic analysis, "Land" is taken to include all the gifts of nature which man uses in production, however diverse they may be in character.

4. Land is Capable of Improvement

There is hardly a farm in England which could not be made to grow much more than it does; if great care were to be taken to break up the soil into tiny fragments, and if the seeds were sown with scrupulous care with regard to spacing and position, increased crops would be obtained. A rich farmer, if able and enterprising, might transform his land by a scientific mixture of soils and an effective use of manure; yet, farming is notoriously unprogressive.

There is a definite reason for this apparent neglect. If a capable farmer bought a piece of park land near to a large town, it would be of little use to him as it stood, and it might prove too sandy for immediate cultivation. If, however, he added the requisite chemicals by the use of lime and manures, and pursued an intelligent policy in regard to the choice of crops and stock, he might make a very high return on his outlay; another farmer might be equally successful by applying similar methods to

swampy land, having first concentrated attention on drainage; a tenant on a farm on a chalk hill might be amply repaid for the trouble and expense of heavy manuring and marling. Yet it remains true that in spite of the proved increase of productivity of land on which money has been sunk in the proper fashion, the capital applied to agricultural land in an old country like England is insignificant compared with that employed in manufacture.

To some extent this may be explained by the careful attention paid to land in past times, for the present soils are much better than they must have been a thousand years ago, in spite of the tendency of continuously used soils to impoverishment. Agricultural lands are becoming more and more of a uniform quality, though great differences in productivity still exist. It seems that in the case of truly agricultural land, opportunities of great rewards to capital and enterprise have been taken in the past to such an extent that long-cultivated land no longer presents tempting opportunities to enterprising farmers.

The explanation is to be sought in the fact that an agriculturist is dependent on climatic circumstances; a manufacturer can watch and control his product at every step, but a farmer must decide what crops he wishes to grow, and when he has taken his measures must leave the result to the working of natural forces. Now the free gifts of nature are unaffected by any expenditure of labour and capital on the part of the cultivator. A farmer can make a profitable outlay on virgin soil because he is able to adjust the balance of the various factors (free or appropriated) by introducing those which are in deficiency. When this balance is reached, a doubling of the efficiency of certain factors cannot be expected to double the product unless the remaining factors are also doubled in efficiency.

5. Tendency to Diminishing Returns

Thus if a farmer doubles the capital and labour (provisionally measured in money) he applies to the land there still remains the contribution of nature's free gifts; up to a certain point, nature will be as helpful as before, for the sunshine which is not fully utilised in ripening a thin yield of corn will suffice to ripen a crop more thickly sown. Sooner or later, however, the individual plants will compete for the constant limited supply of light, etc., and then each plant cannot give the full yield it would have done had the gifts of nature been capable of expansion. Sooner or later, especially in the case of highly cultivated land in long-developed countries, there comes a time when an increase of outlay will secure a less than proportionate increase of product. In one form or another, crowding of individuals occurs, and though the difficulty may be pushed back by better cultivation, better methods, or even, as in China, by an artificial increase in the surface area of the land, the tendency is ever present.

This tendency to diminishing returns was clearly brought out by Malthus and Ricardo. They argued that when a new country was settled, the best and best-situated lands were the first to be tilled; when these were appropriated, land "of the second degree of fertility" was taken up; when this was under tillage, land of the third degree was cultivated; and so on. Where land is a free gift of nature, the settler may select at will, and in fact will sow his seed over a wide area rather than take extraordinary pains over a small plot. The cultivation will be "extensive" rather than "intensive."¹

As land becomes appropriated, only the inferior parts will remain free, and as population progresses further, the

¹ It must not be supposed that diminishing returns is peculiar to land, or even that agricultural products are always produced under diminishing returns. Diminishing returns will be examined more thoroughly in a later section.

whole land will become private property. Ricardo's argument depends on the notion of diminishing returns; if this law were not effective, no one would trouble to occupy inferior lands, and the world's food supply could be grown on a small holding by intensive cultivation.

6. Effect of Agricultural Improvements on Diminishing Returns in Relation to Land

The above account has tacitly assumed that no great development of agriculture has taken place during the increasingly intensive cultivation of land. Ricardo himself, however, noted the effect of improved methods on production. After noting that a diminution in the capital employed on land will produce the reverse effects to those described above, he proceeds :—"The same effects may, however, be produced when the wealth and population of a country are increased, if that increase is accompanied by such marked improvements in agriculture as shall have the same effect of diminishing the necessity of cultivating the poorer lands, or of expending the same amount of capital on the cultivation of the more fertile portions."

Agriculture tends to be conservative, but there is a steady development of farming methods, and present-day agriculture is immeasurably superior to that of medieval times. Progress has, on occasion, been rapid, as it was during the agricultural revolution of the later eighteenth century: new crops were then introduced, and the possibilities of sheep and cattle were more fully utilised. By such improved methods it was often possible to obtain the same produce on a less acreage at a less though a more effectively applied outlay. The law of diminishing returns ceased apparently to hold good.

Ricardo, however, notes two classes of improvements, and only the first leads to apparent increasing returns. "Improvements in agriculture are of two kinds: those which increase the productive powers of the land and those

which enable us, by improving our machinery, to obtain its produce with less labour. . . . The improvements which increase the productive powers of the land are such as the more skilful rotation of crops or the better choice of manure. These enable us to obtain the same produce from a smaller quantity of land. If, by the introduction of a course of turnips, I can feed my sheep besides raising my corn, the land on which the sheep were before fed becomes unnecessary . . . (Other) improvements do not increase the productive powers of the land, but they enable us to obtain its produce with less labour. . . . Improvements in agricultural implements, such as the plough and the thrashing machine, economy in the use of horses employed in husbandry, and a better knowledge of the veterinary art, are of this nature. . . . To obtain the same produce, less land can be cultivated."

Thus the former class of improvements constitutes a real means of escape from the action of the above law, but the effect is purely temporary, unless agricultural progress continues. Cultivation (or stock raising) will be pushed to a new margin of intensive cultivation, and diminishing returns will again appear. If improvements are effective and continuous, a continually increasing food supply may be obtained under increasing returns; however, human experience has shown, up to the present, that an increased demand for agricultural produce is almost invariably accompanied by an intake of hitherto neglected land, as well as by an attempt to wring out an additional supply of produce from better land which offers an increasing resistance to further exploitation. Diminishing return is no inevitable law, but a hard fact of past experience, under certain conditions, *e.g.* war conditions and restrictions on imports, whether due to natural or artificial causes.

The law of diminishing returns refers of course to the actual physical produce obtained, and not to the money

price it commands. As hinted above, poor land near a large town may fetch a high rent; it may be cultivated very intensively so as to produce foods eagerly demanded in the large town; it may not be worth while to grow these products over wide tracts in the country. The produce of (say) wheat on an acre of land tends towards a maximum, and thus the utmost money price a wheat farmer can obtain is limited; near a town, however, he can grow other produce whose value, bulk for bulk, is greater than that of wheat. It remains true, however, that for any particular crop, the law of diminishing returns as a tendency will hold good. Again, the working of the law could not be defeated by a universal replacement of corn by those crops which are profitably grown near a town, for their money price would immediately rise and, in large quantities, they would prove an inefficient substitute for corn.

7. Extension of Diminishing Returns to Mines and Fisheries

Stress has been laid on the case of food crops, but the same principle holds good for those goods which are of plant (and also animal) origin. Further, it may be said that the same law will apply in cases where gifts of nature, formerly present in superabundance, become appropriated as demands on them increase: the most convenient sources will be controlled first. In a new country, river fisheries are free and unappropriated, but in England the same process has taken place as in agriculture. Well-stocked streams are almost invariably in private hands, and are so valuable that they may fetch a high price for the sake of the fishing rights alone. Such rivers are used by rich men, and poorer anglers are obliged to fish inferior streams which they would neglect if the better streams were open to them. If an attempt were made to supply the needs of the country from these food sources, diminishing returns would quickly and sharply come into play; if our supply

of deep-sea fish were suddenly cut off, the rents of the best streams might rise to a very high level.

The case of shore fisheries is similar, when considered from an international standpoint, for each nation jealously retains its rights. The case of deep-sea fishing is more doubtful; some believe that the huge annual toll is small compared with the total supply, but others think that any decided increase in the annual catch in the richer areas would lead to an impoverishment which would compel a partial movement to more barren or more distant seas.

Fisheries, however, differ in one respect from agriculture. Man has carefully studied the nature of crops, and has chosen those which respond most effectively to seasonal changes; when most impotent to master natural forces, he has been able so to guide them by planting those things he wished to grow, that he has obtained a fairly steady supply of produce. In the case of fisheries, he possesses hardly any control at all over natural forces: river culture is possible on a small scale, but deep-sea fisheries are, at present, practically beyond man's control. It is possible that man may deplete the stock; there is no possibility at present of laying out capital and labour for the purpose of maintaining a steady supply.

In this connection, fisheries are intermediate between agriculture and mining. If a fishing-ground is depleted, and then left to itself, it will tend to recover its former condition. Mines have no such recuperative power; mining is a purely "extractive" industry. Nature presents a store of free gifts, but when a particular mine is worked out, there is no possibility of any renewal of supplies. There is a kind of diminishing return in that the application of capital exhausts the most accessible supplies; further outlay can then obtain minerals only from less convenient or poorer parts of the mine; alternatively, the opening up of new and poorer mines will be necessary; the analogy is

very imperfect, and the absence of any annual renewal of produce must be carefully noticed.

Such renewal, which is essentially organic, pivots on the question of energy. In medieval times, this was obtained mainly from timber, except where the muscles of man or beast were utilised. The energy which is required for the development of plant life is often retained in the dead plants. Such plant storage of energy, however, is so slow (*e.g.* peat) that diminishing return is particularly important in this connection, as in timber growing. To-day, therefore, energy is mainly extracted from a store of coal and oil, which is for present purposes as fixed in quantity and as irreplaceable as gold or diamonds. Anxious attempts are made to discover alternative sources. Water-power is governed by the same laws as land, and a waterfall used for electrical purposes may be compared to a fertile plot of land. The vast stores of energy in the wind and waves, and the colossal interatomic energy of ordinary matter are also possible sources of future supply.

Remarkable developments have taken place in recent years in agricultural methods. The progress of science has been so startling that hardly any limit can be set to future triumphs. Immense stores of nitrogen and carbon dioxide are ready to supply an indefinite amount of food when chemistry solves the mysteries of organic syntheses, and when physics learns to control the world's energy. Already, the artificial synthesis of nitrates has become an important industry in Norway, where water-power is utilised.

8. The Law of Diminishing Returns in Present-Day Theory

Before closing this chapter, it is necessary to indicate the position of diminishing returns in present-day theory. The account given in the previous sections ruled the textbooks from the time of Malthus and Ricardo until comparatively recent years.

It is, however, a very misleading account unless expounded with due care and qualifications. It developed, as has already been noticed, out of conditions that were peculiar to English agriculture in the early years of the nineteenth century, and Malthus and his successors raised a phenomenon that was purely local and temporary, into a genuine historical fact of universal application. But, as Carey pointed out, and it is obvious enough to-day,

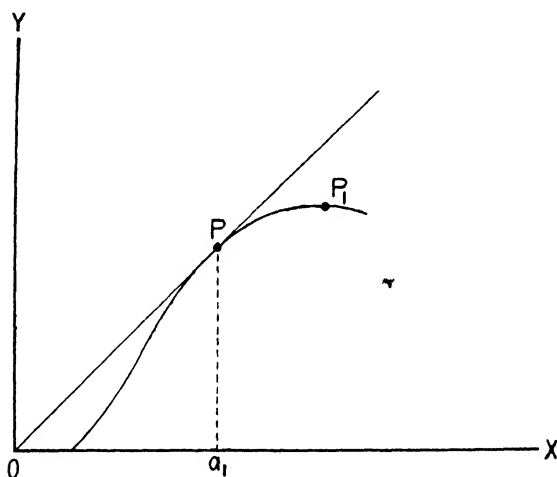


Fig. 5.

agricultural products in the industry as a whole are not normally raised under increasing monetary costs, and neither does agriculture as a whole follow diminishing returns. What the early economists regarded as a historical fact amounts to nothing more than a statement of what will or what does happen under certain conditions.

Diminishing returns can be illustrated in various ways, but Fig. 5 indicates the point where diminishing returns must begin to operate. Suppose that in a combination of

factors $a, b, c \dots$ all are constant but a , which is variable. Increases in the variable factor are measured along the axis of X , and the units of physical output of the product are measured along the axis Y . If a straight line is drawn through the origin to touch the curve of output at the point P , the point P gives the position at which the returns diminish in a physical sense, that is when oa_1 of the variable factor is employed. It should be noticed that although the returns begin to decrease in a proportional sense after the point P , they continue to increase in an absolute sense up to the point P_1 .

In every form of activity that involves the co-operate efforts of multiple resources or factors, if you double some, but not all of the items, you will not double the product. On a farm of given size, you will not double the amount of the produce by merely doubling the amount of capital and labour employed. The reason is, of course, that one or more of the other elements involved in the productive process are now too small, relatively, to function with the enlarged factors efficiently; in other words, a part of the enlarged resources is wasted.

But this is not a feature in any sense peculiar to agriculture. If you double the floor space of a factory, and increase the quantity of labour and organisation proportionately, and leave the number and quality of the machines unchanged, you will not double the output, as some portion of the new resources will not be worked to the same advantage as the original ones; (the marginal addition to the product will be therefore less than the original product. When the marginal additions to a product are diminishing, the average returns must also diminish, a fact that can be proved by a consideration of the averages of a few simple numbers. The average of 10, 9, and 8 is smaller than the average of 10 and 9, and the average of 10, 9, 8, and 7 is smaller than the average of 10, 9, and 8.

The average can be maintained only when the marginal addition is equal to the previous average.

In a similar way, if you attempt to expand the education system, and do not increase all the factors involved proportionally, the returns will be less than expected. So far, then, from diminishing returns being a law peculiar to agriculture, it is, as Wicksteed observes, a law of life.

A great expansion of industrial output is often accompanied by a decreased cost per unit of output simply because the new circumstances have made possible a more economical distribution and administration of resources. But if a farmer decides to double his production of corn, he may well do so at a smaller monetary cost per bushel. If he doubles the area of his farm under the same conditions of rent, and we assume that the extra land does not differ greatly in quality from the old, it will not be necessary to double the number of horses and wagons, machinery and labourers, assuming again that the farm was not understaffed and understocked under the old conditions. Agriculture as a whole does not differ fundamentally from other industries in this respect, and there is no valid reason for enclosing land within the confines of a separate and distinct category.

The paragraph above should make clear that diminishing returns is merely a consequence of the relative scarcity of a factor. Over a very short period the supply of land in a country can be taken as fixed. If, therefore, the supply of agricultural products has to be increased, the output will not expand proportionally to the additional amounts of capital and labour applied, unless, of course, it is possible to import from abroad. Importing foodstuffs has the same economic effect as increasing the supply of land at home. It should be noticed, too, that to relieve the relative scarcity the particular crop that is being expanded at home need not be imported. If the crop in question were grain, increased imports of dairy produce would make more home

land available for corn. Only a little reflection is necessary to see that this relative scarcity of a factor may occur in a short period in any form of corporate effort. As soon as it does occur human ingenuity seeks to remedy it. This is effected economically through the agency of price. The scarcer a factor becomes, the higher its price rises. This acts as a stimulant to new inventions on the one hand, and on the other hand it attracts resources from other lines of production. Within wide limits we can expand the output of any commodity a very great deal, but if it has to be done by attracting land or other resources from alternative occupations, it can only be done by raising the price of the product. This means that although diminishing returns is ultimately a question of physical product, immediately and in concrete cases it is a question of increasing costs. If we must have a particular product, the supply of which can only be increased at more than proportional costs, we obtain larger supplies only at increasing costs, and if the cost of marginal additions to a combination of factors increases, the average cost of the combination, and in consequence, the average cost of the product also increases. In concrete cases, when we have the effects of diminishing returns in mind, we usually speak of increasing costs.

This is not to deny certain obvious differences between agriculture and industry. Agriculture is more dependent on land space than manufactures; it is more dependent on climatic and seasonal variations; and minute specialisation presents great difficulties.

These differences apply with special force to English agriculture, where the land area is very scarce relative to the density of population, and where the ownership of land is in comparatively few hands; and, where too, land is held for reasons that are not always purely economic. When agriculture is in a profitable state, a farmer wishing to increase his output would as a rule have to cultivate his

land more intensively, *i.e.* increase the application of capital and labour to a given area of land, because it would be a difficult matter to increase the size of his farm.

If, therefore, it should become necessary to greatly increase the production of English corn at short notice, as during the Napoleonic wars, and during the years 1914-1919, diminishing returns would follow. But again, this is not a feature peculiar to agriculture.

Precisely the same effect, though not necessarily to the same extent, would be experienced by any industry compelled to greatly increase its output at short notice, simply because the unforeseen, and unprepared-for expansion of output would disturb the correct balance between the different factors in the production. Resources that could be, would be expanded immediately; others, for various reasons, would tend to lag.

Diminishing returns, however, would operate (in most cases) only temporarily. In the long run the various items in the productive process would be adjusted in their correct proportions, and the larger output would tend to be produced at a smaller cost per unit.

It must be noted, however, that if we make a series of additions of a variable to a constant factor, the returns will not necessarily diminish in a physical sense at once in every case. They will diminish if the marginal additions are made when the fixed factor is being worked up to its maximum capacity; but if the fixed factor is underworked at the starting point, or, in other words, if previously, the variable factors were too small in relation to the constant factor, the marginal additions will yield a more than proportional return until the point is reached at which the constant factor is worked to its optimum capacity. Beyond that point, however, further additions of the variable factor will cause the average returns to diminish.

That agriculture as a whole is not always subject to the law of diminishing returns is a matter of observation

only, and while there may be grounds for regarding the tendency to diminishing returns as greater with respect to products of land, including minerals, than in the case of the products of the factory, land or agriculture cannot be rigidly separated from other industries.

- REFERENCES. Ricardo : *Political Economy*.
Malthus : *Essay on Population*.
Davenport : *Economics of Enterprise*.
Wicksteed : *Common Sense of Political Economy*, Vol. II., Ch. 5.

CHAPTER V

AGENTS OF PRODUCTION—LABOUR

1. Labour is Exertion

In early times, human wants were satisfied mainly by means of nature's free gifts; although man's energies were turned to full account, goods were usually appropriated in a form suitable for immediate consumption. The quest for food might entail great hardship, but when it was obtained, no elaborate preparation was necessary. Man had definite wants which could be satisfied by efforts whose aim was the procuring of definite objects which he desired. In spite of the complexity of modern industrialism, a result of the development of capitalism, the essential processes have remained always the same. Wants call forth desires, which necessitate exertions, painful or otherwise, in order that these desires may be satisfied.

It must be repeated that the meaning of "labour" in economic analysis is that of exertion; in descriptive Economics we may often use the term to represent the mass of labourers, but the word should always be used with caution. As an element of production, labour is literally indispensable, for even the wayside fruits must be gathered before use; labour alone, however, is barren, for the hardest exertions are fruitless if nature lends no assistance; even muscular exercises require a well-nourished body. "Land" and labour (in its widest sense) are sufficient, in effective combination, under proper conditions, to satisfy the primary needs. In a special sense these are the essential agents of production.

Mere effort is not labour in the economic sense; labour is directive, the aim being the production of wealth. Even savage life shows countless examples of the adaptation of

means to an end which are the small beginnings of the great industrial systems that are the triumphs of human organisation. Labour is twofold: there is actual muscular movement and also there is a mental effort to direct the work done so as to make physical labour a minimum.

2. The Supposed Peculiarities of Labour

Criticism of the attempts to enclose land, labour, and capital within separate categories has already been made, and it was then pointed out that even in the case of labour which at first glance appears fundamentally different from land and capital, these differences, from a strictly economic point of view, are easily exaggerated. In addition to the points cited in the last chapter, two others may be briefly considered, viz. that labour is always vested in individuals, and that labour will not keep.

But is not creative power vested in land, and machine power vested in machines in the same way as labour power is vested in human beings; and will commodities and capital goods keep idle without deterioration and waste; indeed, in a broad sense, will land?

The reasons for placing labour, or more accurately, the labourer, in a special position are moral and social rather than economic, for he is both a means and an end of economic effort; capital and land are means only. Unfortunately, it is easy here to transcend the borderline of pure Economics, and enter the domains of Politics and Ethics. Again, we must remember that in the actual competitive world, wage-earners are, in their relationship to entrepreneurs, as much means to ends as inanimate resources. How the wage-earner should be treated is a perfectly legitimate question for some branches of social science, but it is irrelevant to pure economic analysis.

"Labour will not keep," said Thornton, and what he meant was doubtless that under the system of capitalistic enterprise, the labourer cannot live without wages, a

truism that has had unpleasant consequences for the labourer in the past. The fact that his resources, relative to his wants, were very small always placed him in a very unfortunate position when bargaining for wages with capitalists, except at times when the supply of labour was very scarce relative to the demand.

3. Labour as Negative Satisfaction

In the older textbooks, labour always appeared in the last analysis as a negative satisfaction. The older cost of production theory regarded as axiomatic that labour was painful effort. We have noted elsewhere the fallacies that grew out of this conception, and while it is true to some extent in certain occupations that labour may be disagreeable or even painful effort to the labourer, this fact has, normally, little economic significance. The labourer is not free to choose, therefore he can but seldom withdraw his labour and so affect the supply.

To the extent that the labourer is a free agent, it is quite misleading to associate labour with painful disutility. Labour is not an end in itself, but only a means to the attainment of a series of ends, and it has significance only in relation to these ends. As a means to an end it is quite inaccurate to describe labour as painful effort even in the case of what is often called the slavery of the factory system.

The theory that labour is synonymous with painful effort is usually supported on the law of diminishing utility. But the fact that, after a time, the utility of labour may pass into disutility has no necessary connection with painful efforts. Under certain circumstances, the utility of labour declines for the same reasons as the utility of any other resources whose supply is unduly increased. As the more urgent ends are satisfied, labour, like other resources, is applied to ends lower down in the scale of importance.

4. Productive and Unproductive Labour

While Economics has never made any vital distinction between manual and mental labour, the controversy between productive and unproductive work is as old as the Physiocrats. Indeed, until well into the nineteenth century, it was almost a fashion to regard some part of the productive process as sterile. The French economists of the eighteenth century, the Physiocrats, regarded manufactures as unproductive; in their opinion, only the agriculturists were a productive class. Adam Smith believed the work of domestic servants, among others, to be unproductive, and Karl Marx even applied the term to a part of capital.¹

Speaking broadly, the early economists regarded labour as productive only when it was embodied in a vendible commodity, but in a specialised industrial society such a definition excludes whole classes of obvious producers, whose work is as necessary to the final product as those who complete the finishing stages. It is true that a miscalculation of the strength of effective demand will render a part of a commodity superfluous, *i.e.* cause it to become waste, so that the labour of producing it does prove unproductive, but that is a circumstance purely temporary and accidental. It can form no ground for a permanent classification.

The matter, however, really goes deeper. It is bound up with the old definition of Economics as the Science of Wealth, or of the causes of material welfare. On the first definition it is easy to see how the labour of domestic servants was excluded, and on the second, the services of the soldier, the actor, etc. But the moment we define the subject as the science of the disposal of scarce goods with alternative uses, the difficulty vanishes. The services of the cinema star and the baker are reduced to a common

¹ See Cannan: *History of the Theories of Production, etc.*, 1760-1848.

denominator. Both services command a price, not by virtue of any relation to material welfare, but because they are relatively scarce in relation to demand. Obviously, too, their degree of relative scarcity is the clue to their difference in price.

5. Labour is Quantitative and Qualitative

Labour is quantitative, *i.e.* it may be measured; it involves time as well as amount. It is also qualitative, *i.e.* it cannot be measured by a purely physical standard, for work of the same intensity for the same duration may produce very different utilities, and this holds more particularly for mental work. Thus a new term is required: the wealth which a man can produce in a given time measures his efficiency, though it involves quality as well as quantity and intensity. It may be gauged by the money measure; efficiencies can be directly compared in this way. Thus the world's production is limited by man's willingness to work, and also by his efficiency.

6. The Theory of Population

Labour is obviously limited by the amount of available labour, *i.e.* by the working population, and this in turn depends on the total population. The name of Malthus dominates this subject as that of Ricardo does the study of rent, but the methods of these men were very dissimilar. Malthus had no analytical ability, but reached his results by patient historical research: he made a careful study of the rate of increase of population in different regions, and attempted to find reasons for what he observed; pessimism is the note of his earlier work.

Rousseau's ideas of the instinctive goodness of the human heart were eagerly received by Englishmen like Godwin, and Malthus' father accepted them. Perhaps because of the "instinctive reaction of child against parent" (Bagehot), Malthus revolted against the prevailing

optimism which hinted that if human restraints could be removed, a Utopia would be at hand. Malthus' objection was simple: he said that if a perfect state could possibly arrive, perfection must soon be destroyed by the mere increase of population; the pressure of population on the food supply would soon pull down the standard of comfort (1798).

Malthus materially altered his views in the second edition of his *Essay on the Principle of Population*: he then considered the hope that personal restraint might prove an effective factor in the check to the increase of population. His argument was no longer an effective reply to idealistic schemes, but his new position was nearer to the truth. At first, his researches led him to believe that every community which he studied would have enormously and quickly increased in numbers but for the presence of certain preventive checks, placed under the head of "vice" or "misery"; notable examples were war, disease, and scarcity. Later he added "the action of another check to population, which does not come under the head either of vice or misery, . . . self-restraint, moral or prudential."

Again by the aid of historical research, Malthus showed that no populous country had ever been able to obtain necessities so easily and so abundantly as in a thinly populated region, and that the greater the population, the greater was the difficulty in producing food.

Malthus wrote in a time of disillusionment, for the French Revolution had bitterly disappointed progressive thinkers; and in addition, the time was one of great hardship, the working classes living in misery, while the Poor Law actually encouraged the growth in population of the poorer classes. Around him he saw masses of men pressed by dire necessity. It is not surprising that Malthus drew the same dark picture of the past that was presented to him at the end of the eighteenth century; he assumed that the population of England would

continue to increase, while the condition of the lower classes deteriorated yet more. Malthus is to be judged as a prophet rather than as a historian, and as an economist rather than as a statistician. "He did not in the least know that he was aiding in the foundation of an abstract science. He thought that he was dealing with real men and that the principles which he expounded were all those that affected his subject" (Bagehot). Thus, almost by accident, by an unlikely path, Malthus gave the doctrine which has played so important a part in economic literature.

7. The Mathematical Form of the Argument

The Malthusian doctrine was developed by later economists and was used by them to round off their own arguments. In the words of Malthus :

"A perfectly happy and virtuous community . . . will double every twenty-five years, but there can be no similar increase in their food. The best lands are taken up first, then the next best, then the inferior, at last the worst; at each stage the amount of food produced is less than before. By nature, human food increases in a slow arithmetical ratio; man himself increases in a quick geometrical ratio, unless want and vice stop him."

The term "ratio," though mathematical in form, must not be taken literally: Malthus supposed it possible that a doubled population might double the food supply, though this was unlikely. Even so, he argued, a further doubling of population would produce a less actual increase of food supply than before, but it might be conceded that for the sake of argument each successive doubling would result in the same increase of produce. Then, speaking mathematically, population would increase in a geometrical progression, and food in an arithmetical progression. If the original population and produce are each denoted by 1, the population in successive periods (*e.g.* of 25 years,

this being about the time in which a quickly growing population will double its numbers) will be given by :—

1 2 4 8 16 32 64 (after 150 years)

If Malthus' statement is rigidly true, the produce in successive similar periods will be :—

1 2 3 4 5 6 7 (after 150 years)

If the statement is exact, it is plain that an increased population will very soon be faced with starvation, and Malthus believed that the difficulty of producing the extra food would be even greater than the arithmetical statement supposes.¹

8. The Basis of Malthusianism

Malthus used this arithmetical illustration to make his principle clear, and we cannot suppose that he believed it to represent the facts exactly. Even if it proved false in this form, the facts on which the principle, so far as it is true, is based, must be carefully considered by economists. If we translate the principle as "population increases faster than food supply," it is seen that Malthusianism is simply the law of diminishing returns, based on the supposition that the supply of land is constant, carried to its logical conclusion. In that case, the marginal returns would decrease as capital and labour were progressively applied, provided that no agricultural improvements were supposed.

An increasing population in an already thickly-populated region can obtain its extra food supply in two ways only (assuming for the present that food cannot be obtained from abroad): it can till lands which the smaller population considered not to repay cultivation, or it can till the old land more intensively, thus obtaining a smaller marginal return to outlay.

¹ See Cannan: *History of the Theories of Production*, etc., for a criticism of this point.

When the population increases, each additional labourer will obtain (on the average) less produce than did each labourer when the land was less intensively tilled. Thus an increasing population will find that the food surplus on which a material civilisation must be built will gradually be squeezed out; in time, the masses will be reduced to the necessity of hard work for the mere satisfaction of the primary needs only; at last, the community will be in the grip of starvation.

Incidentally, it may be noted that it was the *Essay on Population* that inspired Darwin to the studies which led to the doctrine of the survival of the fittest.

9. The Test of Experience

The problem of population versus sustenance is as old as the Greek City State, and views upon it have usually been coloured by local circumstances. Greek thinkers, viewing the question from within the confines of the city wall, naturally looked upon an increasing population with some apprehension.

But in other times, and under different circumstances, other considerations received due weight. England, in the age of Mercantilism; Germany, after the Thirty Years' War, and France in the eighteenth century, in constant expectation of attack from powerful neighbours, regarded an expanding population as an unmixed blessing. Malthus, too, was influenced by particular local conditions, but his pessimistic expectations have not been realised because of circumstances which he could not be expected to foresee.

The opening up of new countries, of the United States and Australia, and, later, of the Argentine, has provided the rapidly increasing European population with an abundant supply of cheap food, so that there is now less fear of world shortage (in normal times) than there was when Malthus wrote. The extensive farming of virgin

soils, rich with the accumulated mould of ages, the intensive tillage of other lands, made possible by improved methods, and the startling improvements in transport have combined to ease the situation.

Thus nature's limitations may be overcome in two ways,—by a more efficient food production or by a restriction of population. In the past, restriction has often worked blindly and, as is the case so commonly, the external forces tending to change men's habits have called out instinctive human efforts which tend to oppose those external forces. War has been one of the most effective methods of defeating the working of the law of diminishing returns as conceived by Malthus. Most past and present wars are economic in origin, in part at any rate. This is plainly seen in the case of nomadic raids : time after time the Central Asian population has grown beyond its food resources or, conversely, a change in climate has lessened the food supply; in each case, the fertile lands have been raided. If a whole region has been over-populated, the struggles for mastery have often diminished the population to such an extent that food supply has become sufficient under the new conditions. The same results have occurred in the conflicts between comparatively populous states, though economic struggle may then be based on the possession of commodities other than food; none the less, though the causation is masked, resulting decrease of population relieves the pressure on food supply.

In other ways also, the working of the principle has led to a cheapening of human life. Apart from the direct murder of children, old people, and other non-productive individuals (*e.g.* the killing of girl babies in China and elsewhere), carelessness was probably a considerable element in the destructiveness of pestilences in past times. The effect of a great plague can be realised in the case of the Black Death: when the plague ceased, the position of the labouring classes was relatively improved; this is explained

partly, though not wholly, by restriction of tillage, which raised marginal return and relieved the pressure on the poorer lands.

10. Restriction of Population and Conditions of Increase

War and disease work their will in populous countries because they aid economic forces, but man himself can and does deliberately slow down his rate of increase. Possibly there has always been a tendency towards a lessened birth-rate in hard times, though among primitive peoples such control would be instinctive rather than deliberate. To-day the doctrine of Neo-Malthusianism is obtaining a strong hold on civilised peoples. There is no doubt that married people are becoming more inclined to limit the number of their offspring, while concentrating their resources on the lessened number of children they are willing to rear.

The birth-rate is a variable quantity from country to country, from climate to climate, and from time to time. Natural increase depends on the ages of fertility, but in civilised countries the institution of marriage presents a check to increase. Our knowledge of this subject is derived almost wholly from inductive sources, and we gather that fertility tends to be greatest in hot countries, where also full development occurs at an early age.

In England, the decline in the rate of the increase of the population (not the absolute decline, as in France) is largely the effect of later marriages. In a highly developed country with an abundant food supply, population tends to become stationary because men refuse to lower the standard of life. There is another type of stationary population, however: in China, the people till the ground so intensively that a numerous population live on bare necessities, and cannot increase much more, for they are not able to lower their standard of life. A country of the latter type is at the mercy of harvests, and numbers are

sensitive to changes in food supply; a wheat-using people like the English, however, can fall back on substitutes when the need arises, and neither birth rate nor death rate is much affected. Ireland before the potato famine was a land of high fertility and early marriages, though emigration kept down the rate of increase; England, on the other hand, has raised its standard of life to a degree hardly suspected till she passed through the Great War little affected by forced reliance on inferior foodstuffs.

Englishmen tend to marry only when they have a prospect of a higher standard of living than that of their parents: the moral restraint thus practised is a most important cause of the declining rate of increase. A peculiarity shared by other European countries is that the declining natural fertility as well as the later marriages and more effective restraint so noticeable to-day is most especially to be found among the more comfortable classes; the poorest people still marry early and have large families. So far as civilisation is enfeebling, it is self-destructive, for the poorer classes increase most quickly. This is regrettable in that those children are born who are likely to possess the fewest hereditary advantages; it is to the good, however, that the newer generation should come from a presumably naturally vigorous stock.

The slower rate of increase in England and similar countries may be imputed mainly to increased restraint in some form or other, though as civilisation develops and makes further demands on nervous energy it is probable that natural fertility progressively declines. Yet the external checks to population, though diminishing in importance, are still effective. The young of the lower animals are independent from an early stage, and a species frequently relies on a fecundity almost incredible to perpetuate itself. Man is slowly overcoming the external obstacles but, in accordance with biological experience, his fecundity diminishes as he masters environment.

Population is concerned with death rate, as well as birth rate. A virile people in a thinly populated country where good land is abundant will multiply at a great rate and double its numbers in twenty-five years or less; restraint is almost absent. Such a people, however, is liable to disease, and the death rate will be very high, while if recurrent famines are the rule, as formerly in India and Egypt, starvation may prove an effective population check. In England, the lowering of the birth rate among the more comfortable classes is fortunately accompanied by a marked diminution of the death rate, largely due to an extension of parental care far beyond the period common among backward peoples.

To sum up, we may say that it is almost a law that as people become civilised and live in industrial towns, the birth rate and the death rate alike tend to fall, and the marriage age to rise; in hot climates, where food is abundant, the birth and the death rate tend to be alike high, a dense stationary population being the final outcome.

11. The Consequences of a Stationary or a Declining Population

It is often assumed that with a stationary or a declining population, unemployment would diminish, but every individual is a consumer as well as a producer, and a consumer many years before he competes in the labour market. If the population is reduced, so is the demand for the products of labour.

General, as distinct from seasonal employment, is of two kinds. One kind, known as structural unemployment, is caused by shifts of demand from one product to another so that as some industries expand, other industries decline. As labour is not perfectly adaptable, unemployment results. The second kind of unemployment, cyclical unemployment, is due to the fact that trade booms and depressions follow each other at intervals.

Both kinds of unemployment are likely to increase rather than to diminish with a falling population. In the first place the standard of living may rise as a smaller number of workers will be equipped with a given quantity of land and capital; the family income will also go further. Demand as a whole, however, will shift considerably. There will be a smaller demand for the products of agriculture, houses, and capital equipment, and a greater demand for luxuries and novelties. In other words, the demand for the products of labour is likely to become more variable and unstable so that both structural and cyclical unemployment is likely to increase. Once a depression begins recovery will probably require a longer interval as there will be less need for productive capacity with a declining, or with even a stationary, population. One of the causes of the instability of trade is the difficulty of adjusting the economic system to new conditions made necessary by technical progress. Such adjustments are more difficult when the population is falling than when it is increasing.

With a smaller population due to a lower birth rate the proportion of old people will increase, and as the national income may tend to decline, the problems of old age pensions, and National Debt, may become a serious matter.

It has been suggested that the decline of *laissez-faire* and the growth of economic nationalism is partly due to the tendency of the population to become stationary, or even to decline. A growing population requires continual expansion of capital equipment, supplies of food-stuffs, and raw materials. Such conditions are favourable to freedom for individual initiative, and international trade. With a falling population both industry and agriculture tend to develop redundant productive capacity. This problem seems one for State control rather than for individual initiative. A smaller population also makes greater the possibility of a nation becoming economically independent.

12. The Theory of Population in Modern Economics

So far, we have reproduced in outline what was usually said on the subject of Malthus and population in the half-century preceding the outbreak of war in 1914. The new conditions created by the development of mechanical transport and rapid communications; the marked effect of the rising standard of living, and the changing position of women in England, and to some extent in other countries, on the birth rate, hurled the "bogy" of Malthus into oblivion.

Since the cessation of hostilities in 1918, however, the evil of unemployment has raised again the problem of over-population, but in a new form. It is no longer a question of food supplies, as with Malthus, but one of diminishing opportunities for employment relative to the population.

But before proceeding further, it should be noticed that most of the arguments for or against Malthus have little direct reference to pure Economics at all. They are either wholly political or ethical, or else they are rooted in that marginal ground at which Economics impinges on those social sciences. It may be politically and ethically expedient that the white races should increase rapidly in view of a possible conflict with the teeming millions of the Far East, or that the population of France should not decline relative to that of Germany; but these are not economic questions.

Economics is solely concerned with the administration of the existing resources of any particular time to the maximum advantage. The problem of the absolute size of the population, the form in which it has so often been discussed, is therefore meaningless. The ideal population, sometimes called the "Optimum," is that population, which, combined with the other available resources or means of production, will yield the maximum return. It is related to diminishing returns, but not in the narrow

agricultural sense conceived by Malthus. If the population expands disproportionally to the other productive resources, capital goods and liquid capital, technology and allied sciences, communications, markets, etc., the returns will diminish in the sense of being smaller than they would have been with a slightly smaller population. And the converse is equally true as Montesquieu in the eighteenth century perceived with the insight of genius. A population may be absolutely large, and yet a little too small to take the maximum advantage of the existing resources. Moreover, at a certain stage of economic culture, technical and other progress may depend on an expanding population.

Viewed in this light, Australia to-day may be over-populated, but we have reached ground far removed from Malthus, and this alone should make clear that population is not relative to food-stuffs alone, but to productive resources in general.

In more technical language we can say that a country is over-populated when the marginal product of labour is less than the existing average output per head, for in that case, if the population were slightly reduced, the average output per head would be raised.

Conversely, a country is under-populated when the marginal product of labour is greater than the existing average output per head, for in such circumstances the average output could be raised by slightly increasing the population.

Whether there is such a thing as an optimum population in fact, as distinct from theory, is very doubtful, at any rate it would be impossible to measure it, for the term implies a qualitative, as well as a quantitative best, and the quantitative best implies not only physique, knowledge, and intelligence, but the best age-composition as well; and these variables would have to be measured in relation to an environment, the changes in which are not solely the work of man.

That there can be no natural tendency for the population to attain to the optimum is self-evident. Any tendency that mere numbers may have to adjust themselves to a changing environment may easily be negated by changes in the quality and age-composition of the population.

13. The Demand for Labour

The demand for labour in industry in general is a function of several causes. It depends to some extent on the absolute quantity of the other co-operating agents of production; the possibility of substitution; and on the direction of technical progress. It is also influenced by the actions of the State. In a country like England the demand for labour depends largely on world conditions, as a large proportion of labour is employed in producing for the export trades, and these trades are affected by the economic and political conditions of other countries.

The demand for labour in any one industry depends largely on the elasticity of the demand for its products. If that demand is relatively inelastic, the demand for labour will be relatively constant. Speaking broadly, the demand for labour is more stable in the domestic and retail, than in the foreign and wholesale trades. It is also relatively inelastic in trades in which the part played by labour is relatively unimportant.

If we place the two cases in contrast we can say that the demand for labour in any particular industry is affected to a much greater extent than the demand for labour in industry in general by shifts of demand, and by the possibility of substitution. It is also less affected by the absolute scarcity of the other factors of production, as even when these are scarce as a whole, any particular industry can obtain the proportion of the total supply it desires by paying the necessary hire price.

On the other hand, any particular industry may be affected to a more or less extent than industry in general

by changes in world conditions; by a trade depression; and by the action of the State.

14. The Supply of Labour

The supply of labour does not depend merely on the total number of population. It is also a function of the proportion of the total population working, the hours of work, and the effort per hour.

The proportion of the total population working is decided by various influences, and although it is dangerous to attempt a rigid generalisation, it is probably true to say that the proportion of the total population working is much less in an advanced civilisation than in primitive communities.

Methods of production in societies that are little developed economically allow only a low rate of output per head. From this follows two things: (1) the length of the working life is practically co-extensive with physical life; (2) female labour is practically universal.

In an advanced society this is by no means the case. Accumulated wealth excludes large numbers from the labour supply either by virtue of an independent income or from the fact that normally the wife is wholly supported by the husband. This is not true of all classes of society. In the textile industries, for example, wives usually continue at the mill after marriage, and among the professional classes many women pursue an occupation beyond the range of domestic duties, but between these extremes, the richer the society the greater is the proportion of women who withdraw from the labour market on marriage.

But in an economically developed society, the proportion of the total population working is decreased in another way. Every country that possesses an education system, by enforcing compulsory attendance at school, makes the supply of youthful labour much less than it would otherwise have been; while at the other extreme, pension schemes

and compulsory retiring ages curtail appreciably the supply of adult labour.

One of the most pronounced characteristics of a highly developed civilisation is a limitation imposed on the hours of work. In a primitive community, workers labour from light to dark for at least six days of the week, and this was roughly true even of England as late as the eighteenth century. During the last hundred years, however, hours have been gradually shortened by successive legislative acts, and the weekly half holiday has become practically universal.

While the two factors discussed above tend to at least off-set any increase in the number of population from the point of view of the supply of labour, the effort per hour works in a contrary direction. Specialisation of processes, and the application of mechanical methods to production, have speeded up work in two ways. Apart from the question of piece-work, a simple specialised process is more easy to supervise, and in many cases the effort per hour is regulated by the speed at which the machinery moves.

In addition to these direct factors, the supply of labour from the point of view of output is affected in no small degree by the general efficiency of labour, but this aspect covers so wide a ground that a separate section is necessary for an adequate discussion.

15. The Mobility of Labour

Labour is the most mobile of all the factors of production, and in two ways. A labourer can move without great difficulty from one part of the country to another, and even from one country to another in some cases. Secondly, most men are capable of mastering the technique of various occupations. Certain groups of occupations demand similar qualities and powers, and in spite of the restrictions imposed by human agencies on the right of entry into many trades, individuals do change their occupations even in these days.

In the past fifty years several circumstances have greatly increased the potential mobility of the workers. In the first place, the development of automatic machinery has lessened greatly the importance of specialised skill; secondly, general education has made the worker much more adaptable. Occupational mobility in the broad sense as used by Cairnes may not be great even to-day, but in a narrow sense there is a high degree of mobility among large sections of the workers; technical changes are continually creating new jobs and rendering old ones obsolete, and a large number of workers pass readily from one to the other.

Mobility in the sense of movement from place to place has been greatly facilitated by the spread of knowledge in various ways, and by the development of cheap transport.

At the same time there are various important limitations on the mobility of the workers. These limitations are of two kinds—human and natural. Government, trade union, and professional regulations often place serious obstacles in the way of radical changes of occupation. In many cases, the expenses of training limit the entry into an occupation, and for that reason a manual worker does not become a doctor, or a lawyer. For the same reason, it is often difficult for an unskilled worker to become a craftsman, as his earning power is likely to be small during his period of training.

Family considerations often fix a worker in a particular locality. It may be to his individual advantage to migrate elsewhere, but against that fact he has to balance the cost of removal; the difficulty of obtaining another suitable house; and in many cases, the loss of family income. Members of his family who are already working may be either unwilling to move, or have little prospect of obtaining work in another locality. In addition to that, a migration to another area may affect adversely the educational interests of his younger children.

16. Efficiency of Labour

(1) PHYSICAL CONDITIONS.—The quality of the workers is as important as their quantity. Industrial efficiency depends largely on the health and strength of the population. These are not only necessary in themselves, but are conditions in the absence of which the other factors of efficiency are valueless. A regular supply of pure water is necessary, and also of good, nourishing food, sufficiently varied to provide not only the requisites for the building up of tissue, but also the salts and acids necessary for continued health. We have seen the importance of a wheat diet, which allows of the descent to a maize or potato diet in hard times, but wheat is in itself preferable to substitutes. It is commonly believed that the substitutes for butter and other foods which were so invaluable during the war have done lasting harm to the physique of the nation, though the effects have been hidden. It is certain, at least, that food which is just good enough to sustain life does not promote industrial efficiency.

Shelter is necessary to efficiency, and fortunately most labourers in civilised countries possess houses, but again, lack of means often necessitates the absence of invaluable comforts; the best-equipped houses may be badly ventilated or otherwise misused through ignorance. A comfortable home, warmed, ventilated, and cheerfully furnished may be an invaluable aid to efficiency by its action on physical and mental health. Few problems are more pressing than that of the lowering of efficiency by cramped, insanitary, back-to-back houses, huddled in mean streets in a foul and smoky atmosphere.

Suitable clothing is also of great importance in our climate; the want of it is one of the chief causes of ill-health, which results in a cessation of work or, more insidiously, in lowered vitality, which is a prime cause of inefficiency. Evils due to lack of food, warmth, and clothing, especially among the poorer classes, are the more

dangerous in that a lowered vitality tends to be transmitted to the next generation.✓

Efficiency is deeply affected by the surroundings in which work is done. The effects of unhealthy trades like lead-glazing are obvious, but the whole atmosphere of much, perhaps most, of modern industrial life is thoroughly depressing; there is a serious loss of efficiency through the consequent lowering of mental tone. Again, open-air work, if not too exhausting, may be very pleasurable and the effect on efficiency is beneficial; even indoor work may be done joyfully, and the output will be for that reason increased or improved. A few manufacturers have realised the effect of pleasant surroundings, and the influence on production has been very marked. The argument that some workers, *e.g.* miners, thrive and are productive under very bad conditions is met by the fact that such are picked men, exceptional in physique and stamina.

(2) EDUCATION AND TRAINING.—Efficiency contains two elements—natural ability (physical, mental, and moral) and also the power of adaptation to surroundings. The former is largely decided at birth, and the best or worst education can do little to interfere with natural development. However, it cannot be denied that the deliberate selection of a suitable environment which we call education contains great possibilities of stimulation of right instincts, and thus develops powers which might otherwise be wasted. Education does not differ from the training process in home, workshop, or even playground but, so far as it is systematised, it is a more powerful factor for good. Lastly, the fine work done by disinterested men in ameliorating the conditions of slum life has a permanent effect on the condition of the poorer classes.

There is probably no very successful business man in England who has not received a sound early training. Illiteracy is so rare that elementary education is regarded

as a common heritage, but the economic results of such training have been far-reaching. Technical training, based on the "ad hoc" principle of teaching those things which are immediately necessary for a particular trade or problem, has done marvellous work, especially in Germany, where the careful teaching (*e.g.*) of research chemists before the war made that country the chemical workshop of Europe. The presence of practical and recognisable difficulties, the direct stimulus of present problems, the concentration of knowledge and experience directed to a definite end, combine to make this a powerful method of moulding man's industrial character. The value of "ad hoc" training was seen in the "citizen army" during the war. Men whose habits were set, middle-aged men who had worked at one trade since childhood, were quickly and "intensively" taught trades completely new to them; painters drove motor lorries, and drove them well, while chauffeurs became good sign painters. Millions of men were taught new methods and quickly mastered them.

Technical education produces quick and sometimes startling results, but does not grip the mind of the worker, and its effects tend to disappear when the immediate need is gone. Specialised education cannot replace the general training of the mind, though it may be a necessary aid. "Ad hoc" methods may serve their purpose so long as conditions do not vary, but the man who has had a general education can often adapt himself to new circumstances better than his fellow who has been trained to a particular process. There is so much common to (say) all textile trades that a man of general ability who knows one process can easily and quickly transfer his skill to another; this principle can be extended to an intelligent general education, for a truly educated man can at need be resourceful and apply his knowledge in almost any sphere, once he has mastered the special difficulties of any particular trade. There is much manual labour which requires a minimum

of intelligence, as does some clerical work (when we consider the spread of elementary education), but for much other production, especially of a higher type, an exceptional intelligence or a careful training is necessary.

Education completes the work done in the home, but a limit to derived efficiency is set by natural ability; much of the effect ascribed to education (good or bad), is attributable to the natural development of the individual. Environment is limited by heredity, of which the laws are as yet unknown. Mendelism and other biological methods may one day solve the problem; we do know that specialised ability tends to run in families, but it is hard to say whether this is due to heredity or to an immersion of the growing child in a particular atmosphere. The question of genius is peculiarly difficult; a man may achieve supreme excellence without education, general or special, and environment and heredity may give no satisfactory explanation of his abilities. It is needful simply to accept genius when it appears, and it is to a nation's interest to develop it whenever possible. The higher education of civilised countries is an effective means of discovering and of training exceptional ability; many fine geniuses have in the past been wasted through placing them in a sphere for which they were ill-fitted.

So far as industry is stable and relies on familiar methods, a workman may be fitted for his place in the industrial system by apprenticeship or technical education, but when methods are developing and changing quickly, general ability and adaptability are essential; thus in a growing system like our own there is an increasing opportunity for genius; general education, applied even to moderate intelligences, is, on the whole, of more permanent value than specialised training.

Labour is thus limited in quantity by population, in quality by natural ability, by environment, and by educable capacity.

(3) OTHER FACTORS MAKING FOR EFFICIENCY.—The efficiency of labour also depends on factors that are collective and co-operate, as well as the mental and physical ones. In a modern industrial society the efficiency of the individual is largely dependent on the efficiency of the group in which he co-operates, or in other words, on the level of the economic development of the industry to which he belongs. Personal efficiency is thus determined by the capitalistic methods of large scale production, which in turn involve minute specialisation of processes. The worker in the scientifically equipped modern factory is infinitely more productive than he would be working in isolation and dependent on his natural and acquired capacities alone.

This very important point is apt to be neglected. A labourer producing without tools, however skilled and intelligent he may be, will produce relatively little. But an individual labourer, even well supplied with tools, will have a relatively low productivity if he works through all the stages of production. The efficiency of labour is mainly a question of specialisation of processes. This reduces the waste of time in passing from one process to the other, and allows the development of specialised skill. More important perhaps even than that, specialised expensive plant can be introduced. Speaking broadly, then, the efficiency of the individual labourer is at least proportional to the extent of the capitalistic organisation of industry. In addition to the question of specialisation of processes, every advance in technical progress tends to increase the efficiency of labour.

Even in the same industry, the efficiency of labour is closely related to the efficiency of the entrepreneur. Modern production is a co-operative effort. The efficiency of each factor is therefore closely related to that of the others, and considered in isolation each factor has little economic meaning. This does not mean that individual

and personal factors affecting the efficiency of labour are unimportant (there is, of course, a relation between these factors and the more general ones), but they are not the most important. The efficiency of labour is largely a question of forces beyond the control of the individual labourer.

Laissez-faire principles are under a cloud in these days, but within limits the absence of restrictions, from tariffs downwards, tends on the whole, to both individual and collective efficiency.

The efficiency of labour further depends on other than economic factors. Political and social security, in a wide sense, play a part. If a worker is to give of his best, he must have reasonable assurance that the fruits of his labours will be secured to him, and this means that taxation must not be oppressive, and that the Government under which he lives is strong enough to preserve peace at home and provide security against invasion from abroad.

This, of course, applies not only to the labourer, but to the entrepreneur as well.

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CHAPTER VI

AGENTS OF PRODUCTION—CAPITAL

1. Capital in a Primitive Economy

Land and labour are the essential agents of production, but they are not the only agents which aid production at the present day. Primitive man, influenced by immediate need, makes desirable things by using surrounding objects, with the exercise of little forethought. In the factory, however, a huge amount of material is made with comparative little labour or assistance from nature. The aims of production in the two cases are the same; the methods are dissimilar.

The key to the difference lies in the term capital. Savages may at times make implements which in themselves give little direct satisfaction but which are used as aids to labour in making goods which can give direct pleasure. These may rightly be regarded as the beginnings of capital, and it is instructive to study them for the light they throw on modern industrialism.

A savage may find that his immediate wants are satisfied but that he might vary his food supply and clothe himself better if he could hunt more effectively. He may then work with the object of making an article which will bring satisfaction at a later time; his wants may be more abundantly satisfied, but he will have to "wait" before receiving his reward. Such an instrument is true capital. It is not necessary to suppose that the making of the implement is accompanied by painful exertion; the actual construction may give pleasure, but if there is a deferred satisfaction in view, the article is capital.

2. Early Ideas of the Nature of Capital

The early ideas of capital, like those of other economic concepts, were coloured by the peculiar circumstances of the Industrial Revolution. The early economists from Adam Smith until the middle of the nineteenth century, regarded capital as a stock of consumption goods necessary to nourish the labourer during the interval of time between the beginning of the productive act and the marketing of the product. It was out of this conception of capital that the doctrine of the Wage Fund grew.

Now it is true that during this interval of time, the workers are consuming such physical necessities as food, clothing, and shelter, but it does not necessarily follow that a stock of these goods must be accumulated before production can take place, or that forms of production spread over a long period of time necessitate a correspondingly large accumulation of these goods.

It was no doubt the case that before Robinson Crusoe could build his boat it was necessary for him to make provision for his sustenance whilst that operation lasted, for the good reason that he was an isolated individual. But a modern specialised industrial society functions very differently. No interval of time between the accumulation of a store of consumers' goods and the act of production is necessary, because under the conditions in which we live, production is a function of co-operative, not of individual effort, as in the case of Robinson Crusoe. An order for boots in the Northampton factories is equally, though indirectly, an order for milk and butter in the neighbouring rural districts, for stockings in Leicester, for clothing in Leeds, and so on indefinitely. The production of these goods is not successive in time, but co-ordinate. An accumulated store of consumers' goods is not therefore essential to production in a modern industrial society.

But in order to avoid falling into the error of the opposite extreme a slight qualification is necessary. It is true that

production is a continuous and co-operative process in a modern society. Capital in all its forms is continually being produced and concurrently being consumed; there is not necessarily an interval of time between these stages. At the same time, it is a fact of experience that capital is accumulated, and over every short period of time there is available not only the supplies currently produced, but past accumulations. There is a sense, therefore, in which we can assert that capital is a stock, but in any but a very short period it is not a fixed stock. Industry is limited by the supply of capital. As we shall see later, if industry is expanded beyond the capital capacity of a country a crisis must follow. But in any but the very short period the supply of capital is flexible.

It is a matter of opinion, too, if final commodities in the hands of consumers can be regarded as capital. Some economists regard them as capital on the ground that they yield a flow of services just as a machine does; other economists prefer to regard them as income, or wealth, according to circumstances, and to reserve the term capital for the tools engaged in the production of products and which never become final consumption goods, and the products which have not yet reached the final stage. From this point of view there is a difference between capital and wealth. Goods are continually passing from capital to wealth as products are completed ready for final consumption.

The differences between early and more modern views, however, are largely questions of emphasis rather than real differences.

The second half of the nineteenth century gave birth to a very different conception of capital, and one associated always with the name of Karl Marx. Taking as his starting point the fact that capital consists largely of durable goods, factories, and machinery, etc., Marx argued that these were merely the products of labour and other

durable goods. Then regressing stage by stage until he reached the initial term in which the first durable goods were made by labour, Marx pronounced all capital as crystallised labour.

But even if the nature of capital were exhausted by fixed equipment, this theory is an explanation of the historical origin of capital and not its economic significance.

3. Capital and Land

The view taken by Marx had the support of tradition, as until recent years economists excluded land from capital. Land was placed in a separate category on the ground that, being a gift of nature, its supply was fixed in volume; in other words, its supply was inelastic. Capital, on the other hand, was considered due to human productive effort; it was a fact of observation that the supply of capital was elastic, that is to say that the supply could be easily expanded, or contracted.

But it has been shown in a previous chapter that there are no valid grounds for the placing of land in a special position. In the long period the supply of land in an economic sense is not fixed, or inelastic; there are limits, too, to the elasticity of the supply of capital, for although the supply of human productive effort may be unlimited, the materials on which that effort is expended are not unlimited in supply. It is true that, over a long period, the elasticity of the supply of capital may be greater than the elasticity of the supply of economic land, but that is a difference of degree only. In a very short period neither the supply of economic land nor the supply of capital can be greatly increased; as aggregates, both may be regarded as inelastic factors of production. On the other hand, any individual can obtain command of such supplies of either factor as he pleases, by paying the necessary hire price. A distinction between land and capital has, therefore, no economic significance.

4. Real Nature of Capital

Durable goods used for productive purposes must be included within the concept of capital, but what Marx failed to see is that, in themselves, they do not exhaust the concept. There is another element to be explained, an element that was formerly, though inaccurately, called abstinence, but which to-day is rendered by the term waiting power. Indeed, it is more accurate to describe the durable instruments of production as capital goods, rather than capital as a general term.

To present this point clearly, it is necessary to probe the industrial system a little below the surface. Production by modern methods, in contrast with primitive production, is essentially "roundabout," to use a term that has crept into economic literature in recent years; and this "roundabout" process is a necessary consequence of minute specialisation.

In an industrial society, goods fall broadly into two distinct classes: goods that are used to satisfy immediate wants, final products, as they are often called, and goods that are either held in reserve for various reasons, or which, by virtue of their nature, contain a reserve of services which are exhausted only after a long interval of time; and as a moment's reflection will show, the higher the stage of economic civilisation which a society has reached, the greater will be the proportion which these goods will bear to those used in satisfying immediate wants.

No household in anything approaching comfortable circumstances adjusts its resources to the minimum demands of immediate consumption. It does not purchase its coal by the bucket, its tea by the ounce, or its meat in daily amounts just requisite for the midday or evening meal. Some reserve of almost every commodity is kept in hand. The underclothing in use, and that at the laundry, seldom accounts for the whole of the stock kept; indeed, these reserves are as necessary as the supplies intended for

immediate consumption if the household is to function properly. Readers who live or have lived in outlying districts, remote from shops, will appreciate the force of this point; and the argument holds in precisely the same way with respect to the distributive trades and industries.

The successful shopkeeper must be always in the position to face the unexpected demand, and it is inherent in the very nature of modern business that it must hold in reserve not only a stock of its own completed products, but also resources of raw materials and accessories used in their manufacture. The reason for this is that, on the one hand, demand is seldom distributed uniformly but occurs rather in waves, while on the other hand, supplies of raw materials are harvested only periodically.

So far, we have considered goods held in reserve deliberately, but most durable goods contain in their nature a reserve of services which is exhausted only gradually during a lengthy period of time. A person can consume shelter only from day to day: hence if through force of circumstances he is compelled to purchase a house outright, he carries in stock a huge reserve of shelter; and what is true of a house is equally true of a piano, a sewing machine, and the equipment and buildings of a factory. It is true in practice that many of these goods are usually purchased by some form of the hire system, but that only means that the amount of goods or services held in reserve are curtailed in quantity; it does not invalidate the general principle.

But the phenomenon of reserve goods occurs in industry in another way. The capitalistic method of production has already been referred to as a "roundabout method." Dr. Hayek compares it to a fan which opens and closes as the methods employed are more or less capitalistic; and clearly, the more the fan opens, the greater the interval of time, or, to put the matter in another way, the greater the number of processes interpolated between the planting of

the raw materials, and the marketing of the final product. But goods, during these different stages, are not consumed in the sense of satisfying an ultimate need: until they appear on the market as final products they are reserve goods.

Incidentally, the reasons why capitalistic methods are much more productive than direct methods should now be clear. Minute specialisation lengthens the time interval of production, but in the long run it accelerates enormously the flow of final products on to the market.

This power of holding stocks of reserve goods over an interval of time is the real nature of capital. It is the essence of what we mean by waiting. In concrete experience, this power cannot be abstracted from individuals or groups of persons. Someone must hold this power of bringing these reserve goods and services into the productive process when required, or, what comes to the same thing from a slightly different point of view, do the waiting during the interval that must elapse before the final product is marketed and consumed.

Capital not only aids the production of consumption goods, but it also assists the reproduction of consumed capital goods. Wieser emphasises the inconsumable nature of capital. By that he means, of course, that if society is to remain even stationary, capital wastage must be made good. If society is to progress, the amount of capital available must increase. In a stationary society, if the conditions of economic equilibrium are to be fulfilled, a strict proportionality must be maintained between the amount of capital devoted to wastage and the amount of capital devoted to production. For society to progress not only must capital be replaced and increased, but it must be improved. Obsolete forms must be replaced by technically improved ones.

This, of course, is not wastage of capital in any real economic sense. To discard a thing that has served its purpose is a necessary condition of progress. In practice, tools and methods that have become obsolete are often

continued in use longer than is economically desirable. As a rule, improved machinery is substituted only as the old wears out. Certain methods that are bound up with very expensive plant tend to resist improvements. Electric lighting made slow progress for many years, largely because municipal corporations had invested huge quantities of capital in gas plants. But it is not difficult to see, however, that there are cases in which it would be an ultimate economy to discard new and profitable plant in order to replace it with a form still more profitable. The gain in one direction might far outweigh the loss in another.

The point at which changes of this kind are wise depends upon circumstances. If a country is liberally supplied with capital there is no difficulty. If, on the other hand, capital is relatively scarce in a country, the capital necessary to make the change may have to be diverted from immediately productive purposes. Now this may raise various difficulties and react unfavourably on employment.

The subject of capital has formed food for controversy since the days of Marx, but much of this controversy has rested on a confusion between origins, ownership, and the economic function of capital. But the nature and economic significance of capital is quite independent of the questions of origins and ownership. No communistic society in the modern world could dispense with capitalistic methods of production, even if private ownership of capital were suppressed, as is proved by the example of Soviet Russia.

5. Circulating and Fixed Capital

For the sake of convenience, capital is often classified in various ways relative to its uses in different forms of business; some of the terms are purely arbitrary, and probably tend to obscure rather than throw light on the inner nature of capital. Such definitions as producers' and consumers' capital need no explanation; they are in no sense fundamental. The term lucrative capital is often

used to emphasise the obvious fact that a good deal of capital is held in the form of reserves of purchasing power, and that capital usually affords an income to its owner.

The most general classification, however, is that into circulating and fixed capital. The commodities which are turned out by an industry into the hands of its customers are described as circulating capital, while the factories, the equipment, etc., by which the commodities are produced is known as fixed capital. In both cases, waiting is involved, whether for the purpose of production or consumption.

The distinction between many forms of capital and consumption goods is not an absolute but a relative one. Take the case, say, of a sack of potatoes. It may be possible to consume them all, but it will be better to eat a certain proportion, setting aside the rest to plant in unused ground; a greater future store will be obtained, at the cost of putting off consumption. There is no difference between the planted potatoes and the others, but the former are capital and the latter simply consumption goods. The conception of fixed capital must not be allowed to mislead: seeds which may be directly used as food must be counted as capital if planted, just as truly as the most expensive and highly specialised machine.

Consumption goods and circulating capital may proceed directly from the same source; if the total amount of the commodity is fixed, circulating capital can grow only at the expense of present consumption. Thus all wealth may be capital in the sense that if the stock of consumable wealth suddenly increases, some part is sure to overflow and form new capital, while if commodities are destroyed, some circulating capital will be called in to compensate for the loss of immediately consumable wealth. We have thus shown that certain consumption goods may be actually themselves used as capital and that the use to which they are put will define their position with respect to capital.

The relation of wealth to circulating capital is thus essentially a question of transference. In extreme cases, capital and consumption goods are perfectly interchangeable, and at any time goods may be transferred from one class to the other without loss, *e.g.* a spare room in a house may be turned into a small shop, and *vice versa*. Usually, however, the decision when taken is irreversible, at least in part. If potatoes are planted, they are soon unfit for immediate consumption, while if eaten, they are obviously of no further use as capital. A continuous series may conceivably be drawn up, in which the transference to capital and *vice versa* becomes increasingly difficult, and this not only on account of the difficulty of obtaining a commodity which is equally useful at a present as at a future time, and *vice versa*, but also because capital usually requires a preliminary preparation, which may require time (waiting). Further, if the partially prepared commodity is of less utility for immediate consumption than the original form, the peculiar utility of the prepared product will be its utility as capital simply.

As the original commodity is in itself of less immediate utility, as the preparation time becomes longer and as the labour expended on the commodity is more and more undertaken with a distant aim in view, the prepared wealth is segregated into a special class, that of Fixed Capital. At one end of the chain, wealth and capital are identical terms; at the other end, the fixed capital may be useless to satisfy any but a single want; yet there is no definite line of separation between fixed and circulating capital, or between the latter and consumption goods.

The creation of fixed capital is thus a matter of transference and waiting, however complicated may be the intermediate steps. The transference of wealth from present to future uses has been made easier by the use of money and, in modern times, of credit. Money is the link between complicated processes, and allows the difficult

transference between raw materials and machinery to be made as certainly as that between grain food and seed corn. An individual must still choose between immediate and deferred uses, but under modern conditions the choice is hidden and indirect. In a money economy, a man is tempted by monetary reward to help production, thereby obtaining desirable things. If he chooses, he can consume immediately all the goods he can purchase with his wages, just as the farmer may eat all his seed corn and potatoes; he may prefer to put off consumption, if he is far-sighted enough to realise that he can buy future goods which will give him a greater total pleasure. He himself may not wish or may not be able to buy materials which, under his skilful handling, will be an aid to further production, but he can hand over the use of his money to an agriculturist or business man, who can increase production just as the small gardener increases his stock of potatoes by intelligence in waiting.

Certain specific forms of capital have proved difficult to classify with precision. Hobson¹ cites the case of fuel, which may be regarded either as fixed or circulating capital, though it is more convenient to place it within the latter category. Cannan² also deals with another example, but the matter is not of special significance economically.

Hobson³ also finds difficulty with respect to the money functioning in a business. He admits that it does circulate literally, and that, so far as it is expended on purchases of raw materials or received from the sale of goods, it may be classed as circulating capital like the other goods which it represents. On the other hand, he argues, it is not illogical to regard the total supply of money, including credit, required to finance a business, as fixed capital; but

¹ Hobson: *Industrial System*, p. 9.

² Cannan: *History of the Theories of Production*, etc., 1760-1848.

³ Hobson: *Industrial System*, p. 9.

as we have noted above, a rigid line of separation is difficult to draw.

6. The Relation of Money to the Concept Capital

Although the reality behind the concept of capital leads us back to waiting and goods, in concrete experience, the transfer of capital is effected through the medium of money.

Money gives command over an almost infinite variety of goods; for our purpose, we note that money may either attract consumption goods or it may be an agent for collecting under one control those goods necessary for production. The entrepreneur, *i.e.* the business man who takes the necessary risks, rarely uses his own capital alone; his fund of fixed capital and flow of circulating capital are concentrated because he can borrow money from innumerable persons and with it can command the services he requires. The essential feature of the operation must never be overlooked; by offers of future gain, he persuades those persons who have money to forego their present command over goods and to defer immediate consumption. There is a partnership of waiting: the investor puts off the enjoyment of his income, and the entrepreneur incurs present labour that he may obtain a future reward.

This fact explains why capital is usually regarded as money, for modern industry is so complex that without the help of money it would be impossible to collect the essentials of production so quickly and easily. The process is made much more efficient by the use of credit, which will be considered later. It is sufficient here to say that the money of small investors is mainly controlled by banks which, by the use of cheques and book credits, are able to lend money to entrepreneurs of proved ability; thus an employer can call in the capital he needs and use it so well that after a period of "waiting" he can give back the capital he borrowed, with a surplus, and yet retain a portion for himself.

Monetary capital may be defined as homogeneous free capital on which an equal return may be expected in every alternative use to which it may be put. This notion must be kept in sharp contrast with the different kinds of real capital, buildings, tools, machinery, etc.

7. The Productivity of Capital

That capital is a productive force is apparent from its nature. The attacks on capital which have been so marked in our social life since 1830 have been stimulated partly by a confusion between the nature and economic significance of capital, and its origins and ownership, and partly by the fact that its phenomena have been disguised by the intermediary of money. Money is only a phenomenal expression, not the essence of capital.

The argument that capital is not in itself productive, but only in co-operation with land and labour need not detain us to-day. Labour without matter through which it can find expression is sterile, and while land in a certain sense may be said to be productive by virtue of natural forces alone, it is in a limited sense only, and in a sense that has little relationship to a developed economic society.

That a part of the joint product in an industrial society may safely be imputed to capital is proved by the low productivity of a primitive community; and the reason goes deeper than the obvious fact that a squad of labourers will produce more if equipped with suitable tools than if left to their own unaided efforts. The goods and services held in reserve through the agency of capital allow a greater intensity of specialisation of processes, as well as a concentration of resources at points and at times in roughly the same way as the reserves of an army, skilfully directed, increase the efficiency of an assault. By means of capital, therefore, industry can expand at the time and place necessary.

Ultimately, the productivity of capital is physical, and is comprised of two parts—one that must be devoted to the renewal of wastage, and the other the physical net yield.

Wieser¹ points out that the physical productivity of capital goods can be estimated only indirectly, because the yield of the capital is always in goods of a different order. Continental economists speak of the different stages of the capitalistic method of production as orders. Final consumption goods are goods of the first order. Goods one stage removed from final consumption goods are goods of the second order; and so on. It follows, therefore, that the products of capital can never be used directly for the repair of its wastage. In the manufacture of chocolate, for example, coal and machinery are used, and a certain quantity of the product chocolate must be attributed as gross yield to this coal capital. It is self-evident, however, that the wastage neither of the coal nor the machinery can be made good from the chocolate.

But if the production has been carried out economically, it is clear that the number of units of utility in the chocolate attributed to the capital used (assuming to simplify the argument that these can be known) must equal the number of units of utility in the coal consumed (neglecting all other elements of capital for the sake of simplicity) plus a surplus of a certain general size. If this were not the case, the productive system would be getting out of order, and steps would have to be taken to bring the above relationship into harmony with the general scheme of production. Clearly, where this cannot be done the particular production will have to be abandoned.

If capital were not productive, there would be no motive for its use. Used up capital would never have been replaced. Incidentally, the share of the product that can be attributed to capital must be large enough to at least repair

¹ Wieser: *Social Economics*, p. 136.

all wastage, and when added to the shares contributed by the other factors must exhaust the whole product.

8. The Mobility of Real Capital

In some respects real capital is very immobile. A factory or mine cannot change its location. The raw materials of industries are mobile in one sense, and yet often immobile when viewed from another standpoint. They can be moved from place to place without difficulty, but many of them are specialised to a particular use.

At the same time even real capital is not without a certain degree of mobility. A coal mine may be useless for any purpose other than producing coal, but it may produce coal for more than one purpose according to circumstances. It may cease to produce coal for domestic consumption, and instead, produce coal for the purpose of generating electricity, or for the purpose of obtaining some by-product. In this sense even a coal mine may be said to possess a certain degree of mobility.

This kind of mobility is much greater in the case of a factory. Some buildings may be useless for any but one kind of occupation; most buildings, however, can readily be adapted for various kinds of undertakings. Even the plant installed for one form of production can often be utilised for making very different things from the same kind of raw material. In many cases it is possible to use the same machinery for the production of different grades of a commodity as occasion requires.

9. The Origin of Capital

It was a commonplace of the older textbooks that the growth of capital depends mainly on the amount of saving, *i.e.* it is governed by the difference between production and consumption. This, of course, is merely a truism. If current production were invariably consumed by current consumption, no surplus could possibly arise.

The amount of real saving represents the upper limit of the growth of capital, so long as credit conditions do not alter¹, but saving, as such, is not necessarily followed by increased production. If an excess yield of corn is simply stored away for future consumption, there is no "increase," or, in modern terms, no production. Saving merely provides the possibility of the formation of capital, which implies not only waiting, but a definite productive aim. If every man in a purely agricultural country saved his surplus income, granaries would be full and flocks and herds be plentiful, but there would be no geometrical increase of wealth; an attempt would be made, as to-day in Asia, to exchange the surplus for durable objects of value, *e.g.* gold and precious stones; some agricultural labour would be transferred to mining. Even in a gold economy, men are apt to hoard their gold, and by deliberately giving up their command over commodities thus lose an opportunity of aiding production. To-day, however, the smallest sums may be put into banks, which sweep savings into industry: men, by their thrift, unknowingly develop manufactures.

We may conclude that in England, under present conditions, an increase in saving swells the stock of capital, after making all allowance for waste and for hoarding. Some believe that if all men saved all their surplus over absolute necessities, production would be checked, for consumption supplies a stimulus without which goods would not be made.

To the early economists, however, the term saving had a different connotation from what it has to-day. Saving was formerly translated, like costs of production, in terms of painful efforts, *i.e.* as a real cost.

Now at a certain stage of industrial development and under certain conditions the above idea was not without truth. In the early part of the nineteenth century the

¹ This matter will be examined later.

expansion of industry was limited by the scarcity of capital. For the labouring man of those days, saving did involve painful efforts. An older generation can cite innumerable cases of individuals acquiring capital only by the deprivation of actual physical necessities.

But even here, the painful costs were less ultimate than might be supposed at first glance. The sacrifice involved in the saving was really the foregoing of alternative ends in order to attain one higher in the scale of preference. It is merely a special aspect of the principle on which we have dwelt so repeatedly, that where resources are scarce, the attainment of one end involves the sacrifice or modification of others. So far from the saving representing painful efforts, it is more correct to say that it was adopted because it afforded greater satisfaction than any alternative course.

But the bulk of the capital with which England built up her industrial greatness came from a different source: it came from the surplus income of the comfortable and rich classes. Much of it involved not even the sacrifice of alternative ends. It was income saved simply because it was surplus to the current expenses of conventional necessities. Saving of this kind is now normally described as automatic saving.¹

Now what was true of the nineteenth century is still more applicable to-day. No doubt the heavy direct taxation that has developed since 1906 now means that some of the savings of even the very rich are made at the expense of some alternative end; and this is still more true of the increasing savings of the lower classes; but up to the limit at which expenditure transcends one conventional scale to another, the wants neglected are very low down in the scale, so that much of the income saved

¹ The restriction on consumption caused by taxation is often called forced saving.

may be regarded as surplus income, though it cannot be measured quantitatively.

Saving is governed by four main factors : (1) by ability to save, *i.e.* by the possession of surplus income; (2) by the relative importance which men attach to present and future pleasures; (3) by the expectation that saved wealth will appreciate or depreciate in value; and (4) by the certainty or uncertainty that the saved goods (or their equivalent) will be actually enjoyed.

10. Further Consideration of the Factors of Saving

(1) DISCOUNTING OF FUTURE PLEASURES.—Saving is almost absent among people who discount future pleasures at a high rate, *i.e.* among those who prefer a small present pleasure to a larger one in the future; savages have usually so little imagination or self-control that they will make no sacrifice to ensure even the keenest future pleasure; and the same characteristic is noticeable in most children. Men of education present great differences in this respect: the terms “extravagant” and “mean” imply the variability of men’s habits in discounting the future. Among men of equal means, the one who lives for the future is the more likely to save. In extreme cases, a man may make money for the sake of children, perhaps yet unborn, or may “found a family” at great expense, that his name may be remembered.

(2) EFFECT OF SPENDING ON PRODUCTION.—Rapid spending does not in itself promote production, though it is commonly believed that extravagance “makes work.” Such spending simply determines the particular direction which production shall take: if much money is spent on cinemas, then the cinema industry is stimulated. If the money had been invested, however, it is probable that it would have had a more favourable effect on production, for it would have represented an increase of capital. Rapid

spending does nothing to make general production possible: it is a demand for present wealth; where present pleasures are insistent, no saving occurs.

(3) DEPRECIATION AND APPRECIATION.—A thrifty man who is earning a good income will save much even when he knows that his savings will depreciate, for he estimates that when his income falls, the future marginal utility of money will be greater than it is at present; a poor man, especially if open-handed, will save little even if he knows that the value of his savings will increase. On the whole, however, the expectation of depreciation will diminish saving, and *vice versa*. Stores of food are likely to spoil, and this applies also to clothing, while a store of ornaments is of no direct use in satisfying hunger or thirst, ever present in a primitive community. Few goods are altogether unchanged by time: even gold alters its value (though it is itself unchanged) and buys more or less wealth at one time than at another. A few goods improve by keeping, *e.g.* wine, but these are of little use as capital. The introduction of a satisfactory monetary system, however, has led to another kind of appreciation which is of increasing importance. Interest is so familiar that we may take its existence for granted, postponing a full discussion. Capital is so important an agent of production that an entrepreneur will pay for its use. In spite of the large amount of capital available to-day, it still commands a high price.

(4) INTEREST.—In normal times the rate of interest in this country is more or less steady;¹ a steady rate is usually accompanied by a fairly steady volume of saving. If the rate of interest rises, the result, on the whole, is an increase of saving, though in individual cases the opposite

¹ In the year 1921 the rate was abnormally high, but this was due to the special circumstances of the times: it afterwards approached the pre-war normal rate (there was a temporary rise in 1929).

effect may occur: if a man is satisfied with a certain definite income on which to retire, it may be that when the rate of interest is raised he will stop saving when he has obtained the lessened principal sufficient to produce the required income at the higher rate. This case often occurs, but is far less common than that where the higher interest stimulates increased saving, for the sake of the higher income. In a large population the stimulating effect of higher interest is almost sure on the whole to overcome the repressive effect. Much saving, however, is independent of the rate of interest, especially in the case of rich men who save automatically because ordinary wants are satiated, and of very poor men, who struggle painfully to build up an emergency fund.¹

(5) SECURITY.—Not the least cause of the modern growth of capital is the greater security of life. A medieval Englishman might slowly build up a hoard of gold, only to be robbed by a strong neighbour. A lawless life encourages present pleasures, for there is no certainty that savings will be enjoyed. To-day, a man may entrust his money to the hazards of industry with a greater sense of security than that with which his ancestors hid gold and silver. Risk to-day is of a different type: an investor may deliberately seek a risky speculation in the knowledge that if fortunate he will reap a greater reward than if he relies on safe investment. Most men, however, prefer a more certain, if smaller, rate of interest. A new motive power of saving continues to develop; repayment is so certain after any interval of time that a man already prosperous will continue to accumulate wealth and set aside a portion for the future enjoyment of dependent wife and children. Gradually as the standard of living is raised, this is becoming a more important factor in accumulation. That

¹ This matter will be discussed more fully in the chapter on interest.

the well-being of dependents is a powerful motive force is shown by the volume of insurance business, especially where payment is made after death.

The security of modern life works in another direction in the case of Poor Relief. Many labourers feel so secure against want that they make no provision against old age, and so the countless small sums which would be diverted into industry are wasted in unproductive consumption. The grant of Old Age Pensions has often worked in the same way, though probably in as many cases it has given a new hope to despairing workers and encouraged them to save a little money to supplement their pension. Again, money which would otherwise be saved to provide an insignificant income may be used to increase productive efficiency, and so be used more wisely than by adding to national capital. In any case the moral advantage of the prevention of destitution by pensions or by other means far outweighs the possible check to capital accumulation. On the whole, it may be said that increased security will mean greater saving.

The presence of the four conditions of effective saving obviously makes for a greater accumulation of capital, assuming as we do that the greater part of invested money finds its way at last into some productive process; however, it must be noted that the question of appreciation of saved wealth is bound up with the possibility of easy and convenient saving. To-day, money and credit make this possible, but they are not perfect institutions, and their very efficiency leads to grave abuses. Much investment is almost pure waste, especially in the case of direct speculation in doubtful companies, particularly in times of business excitement when prices are rising quickly.

If savings are used to buy mortgages on property so that the former owner may spend extravagantly, or diverted into the pockets of company promoters, or invested in unsound concerns, so far there will be no direct

increase of capital, though it may happen that quick spending will transfer money to men who will themselves invest it wisely. A spendthrift may buy goods far above their true value, and a shrewd, unscrupulous buyer may dispose of the excess price wisely and well; it will generally happen that if an honest investment pays a good return, it is able and willing to absorb more capital. A large proportion of the prices paid by rich men often consists of surplus over the true prices, and much of this surplus finally enters industry. Under present conditions a very large proportion of the nation's savings is absorbed in production.

11. The National Dividend and the Source of Capital

The immediate source of capital is the national dividend, but different individuals contribute in largely varying proportions, on account of the variations in individual wealth. To a rich man, the marginal utility of money being low, future satisfactions may appear which are much greater than those granted by present marginal expenses. A poorer man will look forward to more intense wants than the other, but in his own mind he realises that his present marginal utility is high, higher even than the prospective satisfaction of future needs, and he is less likely to save. It is true that the bulk of new capital is accumulated by prosperous men, *i.e.* that capital is derived from profits rather than from wages. The growth of savings banks, however, stimulated small investments, though to-day these banks are met by the competition of Government loans not directly productive. Similar institutions, fed by numerous small deposits, are "Building Societies," as well as the Schultze-Delitsch and Raiffeisen banks of Germany, which grant loans to entrepreneurs.

An increase of wealth tends to increase capital growth not only because industrial capital tends to grow in a geometrical progression, but also because certain production can be carried out only when attempted on a large scale.

Some engineering work could not be done at all without the aid of very expensive fixed capital, which is made very slowly; when it is ready, the need for it may have passed or it may not fulfil expectations, thus causing serious loss. Such experimental production can be carried out only by men who control much capital, and who are so rich or, alternatively, so numerous and well-organised, that they can afford the risk of loss in the hope of great gains.

A Panama Canal can be made only by mobilising the resources of a continent. One of the main features of modern capitalism is the fact that for the first time huge undertakings can be carried out under the control either of very rich men or else of rich states drawing on the resources of the inhabitants. A Channel tunnel or a Severn barrage might bring an enormous access of wealth to this country, but an immense preliminary expense would be necessary. If a country is rich enough to employ huge quantities of fixed capital it will probably find that wealth accumulation proceeds even faster than it otherwise would. When world capital is properly mobilised there may be ambitious projects which, in spite of their expense, will result in an unprecedented bound in the rate of increase of wealth.

12. The Immediate Nature of Capital

From the nature of capital as presented in this chapter the step to giving it recognition as a separate and distinct agent or factor in production is but a short one. But it is unwise to stress this point too far, because opinions differ as to where capital begins, and where it ends. We have already noticed some of the objections against differentiating capital from land; hence the tendency of many economists to adopt a unitary conception by defining capital as income-earning power. Anything, therefore, that yields to the owner an income more or less permanent may be legitimately classed as capital. This definition

breaks down the distinction, in the economic sense, between land and capital. It may seem a little fanciful to attempt to regard the physical and mental powers of an individual as his capital, but in a slave-owning society the slave would rank as capital, just as much as his master's stock.

The differences between land, capital, so called, and labour power is not one of kind, but of degrees of permanency, and transferability of ownership.¹

As has already been noticed, capital is always expressed in a monetary form in an exchange economy, and, as Cannan has pointed out, in the business world capital is not conceived as a stock of goods but as sums of money brought together with the object of making further acquisitions. These sums include both cash reserves and investments that can be liquidated at short notice. Capital that is invested in short or long term loans that are repayable is often called loan capital. Money capital is continually being transformed into loan capital when investments are made, and back again into money capital when loans are repaid.

The language of the business world distinguishes capital assets of an undertaking from money capital. It excludes the money reserves kept with a view to enlarging the business, for those are included within the concept of money capital.

Capital assets refers to the capital actually invested in the business and includes the currency held against current expenses, outstanding loan capital, and natural capital in the form of materials and equipment. Natural capital, when consumed, is made good out of the gross income of the business. Working capital, which is included in capital assets is constantly changing form from natural to money capital, and back again to natural capital; and in some enterprises these transformations are very rapid. What applies to working capital is true of fixed capital, though

¹ That is, of course, in the sense of economic significance; not in the sense of physical form or historical origin.

the transformation periods are longer. There is thus a certain unity between the various forms of the capital of a business, effected by the fact that they all tend to assume a monetary character. This in turn leads to a tendency to equality between the incomes derived from all forms of capital.

The concept of capital assets as distinct from money capital indicates that even from the monetary side the notion of capital is by no means clearly defined and adequately expressed in common speech. Where capital has been invested in forms that for some reason or other have become immobile, popular language denies to it the name even of capital. Where the working capital of a concern has been locked up in improvements, as is often the case, the business is said to be short of capital. This confusion arises from the fact that people usually assume that the whole of the investment of capital in a business must possess the characteristics of working capital.

Again, it is often argued that money capital ceases to be capital when it is not used in business enterprise. It is claimed that in such cases it ceases to be capital and becomes property, as in the case of a man buying a dwelling-house for personal occupation. The above points, and the fact that money does not express the ultimate nature of capital, are some of the difficulties in the way of arriving at a satisfactory definition; and there is another that may be noticed.

Capital as a concept contains no necessary social or ethical connotation. From the social and ethical point of view, capital may assume undesirable forms. Because of this, some economists have tried to introduce a distinction between private and social capital, but in practice a rigid line is difficult to draw.¹

Private and social capital are sometimes defined as acquisitive and productive capital. Productive or social

¹ See Davenport: *Economics of Enterprise*.

capital is really natural capital, and is so defined because it increases the national income in a real sense. Private or acquisitive capital yields a revenue to the owner, but it does not necessarily increase the national income either in a real or a social sense. It includes such capital as is invested in the service trades and in dwelling-houses, as well as the loan fund; and the loan fund may pass into investments which many classes of people regard as anti-social. It was against private or acquisitive capital that the early socialists directed their attacks, and so far as money capital is used for anti-social purposes or in ways that do not further social production, their claim that capital is unproductive is not without foundation. But, as Davenport has pointed out, productive and acquisitive capital can be clearly distinguished only in the extreme cases. Where natural capital is privately owned but used for the purpose of social production, the distinction is arbitrary and unprofitable.

13. The Distinction between Real Capital and Real Income

Money is only a means to an end. In any real and ultimate sense both capital and income must be goods. The final consumer, however, can only consume final commodities. A large part of the supply of real capital consists of goods in various stages of production; as these goods pass into the final stage they become income to someone. Real capital, then, is continually becoming real income.

This distinction may not be absolutely watertight, for as has already been noticed, some economists prefer to regard final goods in the hands of consumers as capital, at any rate, when used in a certain way. On that view the distinction between capital and income lies in the use that is made of a good rather than in the nature of the good itself.

14. Historical Sketch of the Development of Capitalistic Methods

We shall close this chapter with a brief sketch of the method by which the expensive fixed capital of modern times has developed. In addition to the implements already mentioned there was in early societies another type of true capital, flocks and herds; their importance may be judged from Bible narratives. Probably animals were in the first case kept as pets; it is likely that most of the wild beasts with which man has come into contact have, at one time or another, been tamed, and that those animals which are most useful to man have undergone a process of natural selection; many have greatly changed in the process, *e.g.* the cow and domestic fowl. Some tamable animals are naturally useful to man, and others have so developed as to become more useful; however, it is probable that the deliberate rearing of animals for the sole purpose of providing food or transport was a process of slow growth, and even yet, many rich men own useful animals for other than utilitarian reasons.

Thus the growth of capital in early days was not due to "abstinence" or even to waiting in the modern economic sense, but was a kind of by-product of the pleasures of ownership. Even the construction of implements may have been a means of self-expression or a not unpleasant method of employing leisure time rather than a deliberately painful effort, borne because of greater pleasures to follow. But even then the notion of "property" had developed; just as much of the confusion of thought which the notion of capitalism calls out to-day is due to the concentration of capital into a few hands, so the pride of possession was probably the main motive of increase in earlier times, for a man was rich not in proportion to the number of things he could consume, but to his capacity for display. In later times, a rich owner could loan out his stock, and it is to this use of stock as lucrative capital to the owner and

true capital to the borrower that many feudal customs are probably due.

“Once men bred capital more than they made it. . . . (Cattle) are a kind of capital at once co-operative and remunerative: they can be used either to aid labour or to reward it; they are both helps to industry and means of pleasure. Their vital force is the best of early machines, and their milk and their flesh are the greatest of primitive luxuries. There is scarcely anything which primitive labourers more desire, and scarcely anything which helps them so much. . . . Cattle unquestionably, on account of this double desirability, are among the earliest forms of money, probably the very earliest in which ‘large transactions,’ as we should now speak, were settled. It was the first, or among the first, of ‘wholesale’ moneys. . . . Cattle have been a main agent in creating the developed state of industry in which English Political Economy was thought out. Cattle rendered possible primitive agriculture, which first kept men close together, and so made the division of labour possible; were the beginning of ‘wages-paying capital,’ which that ‘division’ first requires and then extends; were among the first things hired, and the first money.” (Bagehot.)

As men gave up their nomadic life and settled in villages, tillage became more important relatively to hunting and fishing, and food supply began to be regularly obtained from the soil. In early times there was no lack of land, which was so abundant that very poor methods of cultivation sufficed to satisfy the needs of the people. Much labour, however, was expended on the cultivated portions, and thus the soil was permanently improved. When the land belonged to the village as a whole, a communal interest was taken in it; improvements on agricultural settlements, however trivial according to modern standards, represented a new type of capital. The early history of developing countries is largely bound up with agricultural progress; from the standpoint of the rich

Roman, his chief capital was the supply of slaves necessary for tillage but even then the artificial increase of fertility which took place was a true growth of capital.

In the next stage, commerce began to develop, as the differing products of neighbouring countries stimulated exchange, and as weaving and other industries so far developed that certain trades began to grow in definite centres. Tools were still of a simple type but, such as they were, formed the beginnings of the expensive fixed capital of modern times; capital, however, in the later Middle Ages was mainly represented by the developing industry of shipping. In the sixteenth century, buildings used for manufacture appeared in England, and these were true capital.

Both agricultural and commercial capital have developed continuously up to the present; relatively speaking, however, they have been overshadowed by the stupendous growth of industrial capital which has been a feature of economic life since the eighteenth century. Even in agriculture, however, capital is playing an increasingly important part relatively to land and labour, as expensive buildings and implements testify, as well as the extended use of circulating capital such as manure and other commodities which are applied with a view to the next harvest. In manufacture, modern production and trade necessitate the use, not only of complex machines which partly aid and partly displace labour, but also of the immense stock of capital owned by railway and shipping companies. The national wealth of England tends more and more to consist of fixed capital, and we may look forward to a time when capital will become the most important non-directive agent of production, as mankind is continuously relieved of monotonous labour.

The present-day prominence of fixed capital has meant a divorce of labour from the ultimate product. In early times man found or made those same goods he meant to

use, but to-day most workers are involved in only a single stage of production. Fixed capital usually necessitates "roundabout" production: each single article is apt to be made more slowly than if directly shaped by human labour—at least in the case of goods easily manufactured by hand—but this lengthening of the process is far more than compensated by the saving in cost and the actual saving in time when commodities are made in quantity. To make a pair of boots by a new machine, it is necessary to wait till the machine is made, but the time lost is soon recovered when a continuous supply of boots is required. In time, economies may be effected which will make machine production more direct, but the new application of machinery is nearly always accompanied by a specialisation of the work of individual workers and by a lengthening of the production process both by the necessity of producing machinery and by the pulling out of manufacture into successive stages.

The above brief sketch of the development of capitalistic methods suggests that a community accumulates capital, not so much as might be supposed at first sight, by devoting resources to the production of immediate consumers' goods as by using them for the purpose of increasing the supply of producers' goods in order to make possible in the future the production of consumers' goods on a greatly enlarged scale. This is the ultimate object of saving, from the communal point of view, in a modern economic society.

The continued development of capitalistic methods makes it worth while at certain points to scrap machinery. This is not waste in an economic sense, but a necessary condition of progress. Improved methods of production, which render classes of machinery obsolete and the substitution of new types essential, makes a drain on immediate savings and tends to restrict the immediate supply of consumers' goods; but in the long run, however, the position is reversed, for the greater volume of the output

of final commodities more than compensates for the temporary loss.

This brief historical sketch should make clear a point sometimes neglected. The substance of capital is not only saved-up labour, but saved-up land.

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CHAPTER VII

AGENTS OF PRODUCTION—ORGANISATION

1. Organisation a Unifying Process

The processes of production must be completed and unified by the appropriate organisation. Land of incomparable richness may grow raw materials near to the best equipped factories and near to a good market, amid a supply of high-grade labour, but not one article will be produced until the factors have been brought together by a directing intelligence. The combination of the three agents already considered may form a whole far more effective than the sum of the three agents taken singly, for each agent aids the others, so that each is more effective than if it worked alone. Labour by itself can produce not a morsel of vegetable food, and uncultivated land satisfies human needs scantily and accidentally, but the combination of the two could feed the human race.

Capital not put to its proper use may be worth less than the material from which it was derived; in combination with labour it transforms man's productive powers. Organisation stimulates production in so far as it brings together the other three agents, but it has also an increasingly important function in that it attempts to combine them in such a way as to lead to the best possible results. A perfect organisation in relation to a given supply of the other three agents is the one which, with the materials provided, will so arrange their working as to give the greatest and most economical production. It does not follow that such a maximum production will be the best for the community, for the goods produced may be harmful, but it is advisable to search for the conditions of effective organisation and to leave other questions for later treatment.

2. The Primitive Handworker

The boundary line between individual directive action and labour cannot be defined exactly. In primitive handwork the making of an article is an indivisible process: a man uses raw material which happens to be present, works it with tools he possesses, while the labour performed contains both mechanical and directive elements. There is no separation of these elements, for the man himself keeps an end in view, and uses land, labour, or capital indiscriminately according as they will serve his immediate purpose. The director of operations is the man who actually carries them out, and the intelligence used in doing the work is of the same kind as, and is indistinguishable from, that used in collecting and co-ordinating the materials and efforts required.

3. The Modern Entrepreneur

The present production system is of recent growth and began to develop during the Industrial Revolution. Side by side with the progress of that individual directive ability which is a lineal descendant of the ability of the early handworkers, has been the growth of an economic structure which has greatly aided manufacture but has at the same time placed limits on free individual development. The task of the entrepreneur is twofold—he must organise and direct his own resources, and also take care that his actions are in harmony with the economic structure as a whole. The most skilful man can no longer control even a purely production process on any but the smallest scale: he must show his ability by turning the working of the system to his own advantage.

Instead of the limited environment from which he has to choose the various materials for making a small article, the modern manufacturer knows that there are enormous stocks of raw materials grown or ready to be grown by nature's processes, masses of human labour he can put to

good use, and much machinery and other fixed capital. So far as he selects from this mass the combination he can obtain and control, of the proper kinds and in the right proportions, he thereby supplies organisation and his work can be considered a form of labour.¹ So far, however, as his choice is widened and his efforts at combination are made easier by the nature of the economic structure, there appears a type of organisation which is independent of him, though it is the outcome of the economic action of large numbers of men like himself. Organisation as an agent of production is sometimes taken to mean this secondary effect rather than those individual organising acts of the entrepreneur.

4. Industrial Systems

This secondary action is well exemplified in the case of railways. Rolling stock cannot be made spasmodically, but must be produced on a large scale, on account of the expensive plant employed; manufacture has thus had to be concentrated in a few places. By this very fact, economies were made possible and inventions encouraged; the existence of railway centres thus reacted on production, and gave these centres such an advantage that manufacture was more effective there than anywhere else. The fact that engines were made in the first place at Swindon or Crewe led to the continued pre-eminence of these places; efficient and economical production in a self-contained centre led to the network of processes which was the means of yet more efficient work. There was probably no deliberate attempt to create a system, but any continued action on the part of a collection of men must inevitably create a structure which conditions further effort.

The relation of biological to economic method is especially noticeable in this connection, for the laws which govern

¹ But only in a very general sense. Economic labour and economic organisation are fundamentally different.

the rise and fall of genera of plants and animals are similar to those which hold in respect to different types of economic organisation. Thus, on the whole, those human groupings which can most effectively use their environment are most likely to persist. The marvellous adaptations of animals to their surroundings made the same kind of impression on eighteenth-century thinkers as did the working of the economic system of that day; an economic optimism grew up, finding its fullest expression in nineteenth-century writers like Bastiat and Carey, whose ideas contain much truth.

Whenever an assemblage of forces is acting, the underlying laws work in such a way that a system is created which will overbear the action of individual forces. Gravity is an example; if a pendulum is displaced, gravity attempts to restore the former equilibrium. One of the deepest and most widespread of scientific principles is that when a disturbance of stable equilibrium occurs, forces are set in motion which oppose such disturbance and tend to restore equilibrium; the thoughtful reader will find many examples of this principle in the preceding and succeeding pages. Scientists will recognise various forms of the law; Lenz's Law in electrodynamics will suffice.

This principle is the true basis of Bastiat's doctrine of economic harmony. Under the guiding principles of self-interest and free competition an economic system has developed; any action which disturbs the prevailing equilibrium of demand and supply (*e.g.* the unexpected destruction of large stocks of a certain commodity) will (in this case through increased prices) stimulate action which will tend through increased production to remove the shortage. The army system during the War was an attempt to create artificially a substitute for civilian organisation; however, the arbitrary army rules so traversed the natural groupings of action and motive that the rules were "worked," and either evaded or given a

practical application different from apparent intention, but in greater harmony with existing conditions.

5. Economic Environment

Organisation, however, possesses no sanctity, and a clear distinction must be drawn between the process of adaptation with a view to making a more favourable use of environment and that of self-improvement with a view to benefiting that environment. In Economics, the environment of an individual is composed largely of other persons, and it does not follow (though it will often happen) that the man who manages his own business most successfully will benefit his fellows the most. This is the root objection to the theory of *laissez-faire* in its strictest form—the theory that the natural structure of society is so perfect that Government makes a mistake whenever it interferes in economic matters. Economics differs completely from physical science and partly from biology in that the environment itself is subject to slow modification by collective action. Economic habits are visibly altering, and an organisation that a classical economist would have considered impossible of realisation seems to be a not improbable future development. Above all, it must be understood that organisation is in a process of continual growth, and depends not only on the immediately preceding system from which it developed, but also on changes in habit and custom, on the growth of knowledge, and on the development of ideals.

6. Functions of the Entrepreneur

But while it is true that the term organisation has a very wide content, the fact remains that in industry, organisation for a definite conscious purpose has a very important place.

Directive organisation in industry is the work of the entrepreneur. On him falls the bulk of the deliberate organisation within a firm; it is he who gathers the different

economic strands into a system which results in each consumer receiving the goods he desires. His functions, therefore, are many and varied. | The first function of the entrepreneur in a competitive society is to plan, and initiate new undertakings. } He has also to decide the nature and the quality of the goods which the enterprise shall produce. A third function is that of co-ordinating the factors of production necessary for the enterprise, that is to say, he must acquire command of the necessary amount of capital, and the different grades of labour, and co-ordinate these factors in the right proportions. The entrepreneur must also decide the technical methods that must be followed in order that his output may be produced at the lowest average cost per unit of output. That function entails, among other things, decisions with respect to the size of the firm and its output; whether all the different production factors shall be integrated under one roof, or whether they shall be diffused among various localities; and what substitutions are necessary, and possible, between the factors of production as their relative prices change. The entrepreneur must also make the arrangements necessary for the marketing of the output when it has been produced.

But the most important function of the entrepreneur in the world of modern business is that of uncertainty bearing. Uncertainty bearing is a little difficult to define with precision, but it is best understood as the responsibility for risks of such nature that cannot be standardised and insured against. In some cases the chance that a certain event will occur with a certain regularity can be measured with great accuracy. These calculable risks can be taken over by assurance companies at low premiums; there are, however, many risks connected with a business undertaking that cannot be measured. The success of an enterprise depends on future events the course of which is very uncertain. Estimation cannot pass beyond speculation. The bearing of these uncertainties is the most important

function of the entrepreneur in the modern business world.

The distinction between the true entrepreneur and the manager should now be clear. Management, at any rate in the narrow sense, is a routine matter. Some of the functions of the entrepreneur enumerated above may be, and indeed often are, delegated to a salaried manager. Uncertainty bearing can never be delegated; it always remains with the entrepreneur.

Captains of industry like Ford, Austin, and Morris are typical examples of the true entrepreneur. Such men translate the fruits of technical progress, the work of the scientist and the inventor, from the potential to the actual. These men bridge a gulf which, without their peculiar abilities, would remain impassable.

The function of uncertainty bearing is not attached to every entrepreneur. All entrepreneurs are not pioneers; a large number function along merely routine lines, and it is this fact that has caused many economists to regard the work of organisation as a superior kind of labour. It should be clear, however, that this can refer only to organisation as a supervisory function.

There is obviously a difference in kind between the function of supervising, and those of co-ordinating and of uncertainty bearing.

7. The Entrepreneur in Modern Business

Few men can continue efficiently to supply the capital, the supervision of labour, and the responsible work required from a single business head; partnership has long been a valuable means of lightening organising work, especially where a subordinate of proved ability has been promoted. Thus while duties have become complicated, the work is divided; the process has continued by the formation of joint-stock companies. The entrepreneur, in the former sense of the term, disappears, and his work is carried on by a group of men. Capital is provided by a large number

of small shareholders; the general supervision is entrusted to directors, who may not have a detailed knowledge of the processes of production, but must rely for the detailed supervision necessary, and partly also for decisions on questions of policy, on paid managers, who have probably been promoted. The manager in a limited liability company of this kind is much more than an ordinary workman, but less than an entrepreneur. But it is impossible to generalise: his power and influence vary with circumstances. In many cases the managing director occupies the position, and exercises the functions, of the entrepreneur.¹

8. Joint-Stock Enterprise

Joint-stock enterprise is a powerful and efficient engine of production, but its defects are that the shareholders have little influence on policy and may be divided among themselves, while an inefficient manager is less easily controlled than in a private firm. The advantages are that the agents of production are effectively combined, and that, while the directors can bring a fresh mind to general problems, the best ability in the firm need not be hampered by lack of capital, for able organisers may expect promotion. Such a company can expand at will: the most capable business head finally loses his powers or is faced with problems of organisation too large for him, but a company is independent of any single man; a board of directors may thus initiate larger policy changes than an individual. Big business is tending towards company management, and State departments are also built essentially on the company plan; the advantages and

¹ In attacking the problem of real entrepreneurship, the best line of approach is that of ultimate responsibility. If the Managing Director is subject to definite control by the shareholders, entrepreneurship does not exist in its pure form.

For a detailed discussion of this point see Knight: *Risk, Uncertainty, and Profit*, Ch. IX.

disadvantages of State and municipal trading are similar to those of company management.

Co-operative production has not yet achieved the success many people think it deserves; one main reason for comparative failure has been the hesitation of members to give a salary high enough to call out the necessary managerial ability. Socialistic production has also made little progress, if State and municipal trading is excepted; English Socialists aim largely at the control of big-scale industry ripe for combination.

The public joint-stock company is the typical form of large scale organisation, but there still remain many "one-man" businesses. A form intermediate between the individual proprietor, and the public company, is the private limited company. In both forms of the company the liability of the investor is limited to the amount of his investment, but the capital of a private company must be privately subscribed. Should it be necessary to invite the public to take up shares, or debentures, the company must be transformed into a public limited company.

Joint-stock companies frequently amalgamate for various reasons; these amalgamations may assume various forms, but the Trust and the Cartel are the most important. We shall refer again to these types of monopolistic organisation in a later chapter.

9. Division of Labour and Specialisation

Perhaps the most characteristic feature of the organisation of modern industry is the growing specialisation of function of the workers, *i.e.* the growth of Division of Labour. The opening chapter of the *Wealth of Nations* gives the classic account of the subject.

"The greatest improvements in the productive power of labour, and the greater part of the skill, dexterity, and judgment with which it is anywhere directed, or applied, seem to have been the effects of the division of labour. . . .

To take an example, therefore, from a very trifling manufacture, but one in which the division of labour has been very often taken notice of, the trade of a pinmaker: a workman not educated to this business (which the division of labour has rendered a distinct trade), nor acquainted with the use of the machinery employed in it (to the invention of which the same division of labour has probably given occasion), could scarce, perhaps, with his utmost industry, make one pin in a day, and certainly could not make twenty. But in the way in which this business is now carried on, not only the whole work is a peculiar trade, but it is divided into a number of branches, of which the greater part are likewise peculiar trades.

“One man draws out the wire; another straightens it; a third cuts it; a fourth points it; a fifth grinds it at the top for receiving the head; to make the head requires two or three distinct operations; to put it on is a peculiar business; to whiten the pins is another; it is even a trade by itself to put them into the paper; and the important business of making a pin is, in this manner, divided into about eighteen distinct operations, which, in some manufactories, are all performed by distinct hands, though in others the same man will sometimes perform two or three of them.

“I have seen a small manufactory of this kind, where ten men only were employed, and where some of them consequently performed two or three distinct operations. But, though they were very poor, and therefore but indifferently accommodated with the necessary machinery, they could, when they exerted themselves, make among them about twelve pounds of pins in a day. There are in a pound upwards of four thousand pins of a middling size. Those ten persons, therefore, could make among them upwards of forty-eight thousand pins in a day. Each person . . . might be considered as making four thousand eight hundred pins in a day. But if they had all wrought separately and independently, and without any of them having been educated to this peculiar business, they certainly could not each of them have made twenty,

perhaps not one pin in a day; that is, certainly, not the two-hundredth-and-fortieth, perhaps not the four-thousand-eight-hundredth part of what they are at present capable of performing, in consequence of a proper division and combination of their different operations."

The student is referred to the original for the remainder of the exposition; the striking passage quoted may not be a perfect picture of the pin industry to-day, but the same principles are everywhere met with in modern manufacture. We have already noted the broad lines of division between hand and brain worker, between labourer and entrepreneur, but specialisation is carried on far more minutely. It has developed as a result of the experience that a piece of work is done better and quicker if the worker has had previous experience of that particular kind, and this holds alike in mental and manual labour. Even the works of pure genius, the masterpieces of painters and musicians, would have been impossible had not technique been developed by long and patient practice; in the case of the average man, trained and experienced inferior skill can do better work than superior but inexperienced talent; an experienced clerk of less than normal intelligence may do his work better than a newcomer of real natural capacity.

The close connection between the possible degree of division of labour and the size of the market is self-evident. The important point of the division of labour is that when a group of complex processes is broken up into a succession of simpler ones, some of these lend themselves to the use of machinery.

But the use of machinery and the consequent adoption of indirect processes leads to a further division of labour, but the accruing economies are limited by the size of the market, for standardisation would be wasteful if small quantities only were produced.

This fact alone explains the early and rapid development of machine processes in America, because, owing to the

size of the home market, productive methods were possible that would have proved unprofitable in other places.

It should be noticed that from the above point of view the search for new markets is not so much a question of finding an outlet for surplus products as is popularly supposed, but rather of finding an outlet for potential products, for the problem confronting the entrepreneur is as much a problem of increasing profits by reducing costs, as of increasing profits by multiplying the number of sales.

Every alteration in the organisation of production due to further specialisation in one direction, assuming that the market is wide enough, causes reactions which make for greater productivity elsewhere; progress therefore becomes cumulative.

10. Advantages of Specialisation

In the case of handwork the processes involved are physiological; in mental work they are more hidden, but are probably of the same fundamental character. When a game is first learnt, attention must be concentrated on every detail, but when a particular stroke has been mastered its use becomes instinctive, and nervous energy is set free for the learning of new strokes; a batsman must learn first to hit the ball, but having done this, he may learn to control its destination. To some extent, thinking capacity is a substitute for experience, but is slower and less certain in its immediate action; while the highest work demands careful thought processes, much other productive work is a mere mechanical repetition of simple movements; for this the instinctive co-ordination of mind and muscle, developed only by practice, is essential.

Division of labour is thus helpful to the worker in that it allows of constant repetition of the same task by the same worker, enormously increasing his efficiency, up to a certain point. This is made possible by the splitting up of a complete production process into a series of simple

and understandable movements, each single one presenting little difficulty but in combination forming a whole which in its entirety would tax the skill of the best worker. Production is less direct, but mass production, especially in the case of easily-graded goods all made in the same way, is more quickly achieved. Those branches of production which make goods not easily gradable, *e.g.* high-class tailoring, are less susceptible to division of labour, for so much thought and individual skill is applied at each stage that there is little possibility of division of the process into a series of simple automatic actions.

Not only is the work simplified by this division, and not only is the efficiency of each worker improved by repetition, but there is a better chance that each worker will be put to that process for which he is best fitted. The stages in modern manufacture are so numerous and diversified that varied abilities may be utilised; each man will naturally gravitate to that process which requires the peculiar abilities he possesses, and these will be sharpened by repetition. Men with skilful hands, quick wits, good judgment, or intellectual ability may each find scope, and the value of repetition is greater in proportion to the original capacity of the particular worker.

If a thousand men all make the same complete article, they are not likely to master the whole of the processes, but if each specialises on a particular section, he will be able to explore its possibilities, especially if he be attracted to that particular process; as the efficiency in each single section is likely to be very high, so will be that of the manufacture as a whole. Much of the inefficiency of an army is due to the fact that no real attempt is made to place men in the positions in which they would naturally do the best work, while the soldier's tasks are so many and varied that there is little opportunity of learning a single process thoroughly; even here, however, cases often occur where men learn new methods successfully through being

suiting to their position, while liking their work and obtaining sufficient opportunities for continued practice.

Specialisation allows of economy in time, as well as in tools and materials. The medieval craftsman spent much of his time in the fields, for he followed agriculture, and in any case his market was so limited that he was not assured of continuous work. Much time was wasted in passing from one occupation to another, and there might be alternations between slackness and feverish hard work. In the modern factory, most of the working day is passed in a definite place, and little time is thus wasted in unnecessary movement. There is also an economy of labour in the sense that an attempt is made so to fill up the time of each labourer that he is employed to his full capacity. By this means, unnecessary labourers have been transferred from occupations in which they were only partly employed into new ones in which they could work more effectively. The same holds good with respect to tools and materials: when many people weave cloth by hand, there is much wasted material, while each worker requires separate tools or machines; but when fewer labourers are enabled to do the same amount of work, there is less wastage and fewer tools and machines are required.

Perhaps the greatest advantage of specialisation is that it furthers the development of "roundabout," *i.e.* capitalistic, methods of production.

11. Disadvantages of Specialisation

There are two great objections to the introduction of division of labour into industry, *i.e.* monotony of work and the dependence of the individual worker on his particular occupation. When a man learns a trade, his interest is usually greatest when he begins to master it; when the work becomes instinctive and he loses the capacity for improvement, the sense of monotony deepens as his execution is perfected; he may feel a pride in his excellence,

but, if he works regularly at the same task for long hours he is repelled by the lack of freshness. This is a serious evil, for production should be a means to an end, that of greater human happiness; no community can be healthy if the pleasures of the fortunate are obtained at the expense of the labourers; the effect of drab working conditions on the life of the worker and, more important still, on his conscious or instinctive attitude towards his growing children, may utterly preclude the hope of a better and brighter future for those classes which have in the past been caught in the grip of the more malign forces liberated by the growth of specialisation.

The very perfection of the adaptation of individual skill to the demands of specialised industry increases the dependence of the labourer on the system: if the man loses his skill, or if new methods appear which make his work valueless, he may find it difficult to obtain employment; in so far as he has given his whole time and energy to his particular process, he will find it all the harder to transfer his general abilities to other branches. In medieval times, the diffusion of interests prevented the absolute dependence on industrial fluctuations which is so common when a developing industry requires much highly specialised labour. From an economic point of view, however, the advantages of specialisation are so great that the drawbacks seem negligible.

12. Development of General Intelligence

It is possible to retain the advantages of division of labour while avoiding the serious drawbacks, but the problem has not yet been solved in practice. The remedy lies in a diffusion of education in its widest sense, leading men to make the best use of leisure. If the claims of super-production and of welfare conflict, the former, in an ideal community, must give way; it is certain, however,

that a wiser use of leisure would so react on general intelligence that the quality of production would in the long run be improved, and the quantity be kept up to its former level under pleasanter and less strenuous conditions, during shorter hours of work. There are signs that leisure is being used more wisely, both in respect to physical and mental health and also to efficiency. A developed intelligence may go far to remove the drudgery of daily work, for it may bring out unsuspected implications in it, and so keep alive the interest and the hope of further progress which are sooner or later killed by continuous drudgery. Again, the sharpening of general intelligence lessens the dependence on a particular process and makes it more easily possible to move to another occupation when necessary.

The development of general intelligence directly stimulates improvement of productive methods and also tends to remove the causes of monotony. When a process is so split up into its parts that each section is simple enough for its efficient working to become monotonous, it is time for a machine to take over the work. Machinery can do wearisome work automatically, and though its immediate effect may be against the interests of handworkers, as in the later eighteenth century, labourers will benefit in the long run. Capitalistic methods may possibly be misused, but machinery may become the most powerful means of lifting educated labourers into the pleasanter sphere towards which they should be impelled by the finer and more highly developed feelings of the community.

General intelligence is being developed by an extended system of education, prominent features being the abolition of half-time and the raising of the school-leaving age. Again, the necessity for a long apprenticeship has passed, and the time thus saved may be given to general education.

13. Machinery

Machinery usually leads to increased production, and this in its turn to possibilities of further division of processes, again leading to new machinery. Thus the use of machines is pushed further back, and threatens those processes which have been peculiarly the domain of high-class labour. This is the result of the growth of standardisation. Hand-made articles differ from each other, however slightly, but machine-made goods of the same pattern are all alike; such goods can thus be easily "graded" in different qualities. When machinery is applied to a product, the price usually falls, and a demand is often created for the new standardised article. Thus suits can be turned out by mass production, easily graded by colour and quality, and the process is so cheap that a demand for such suits may be created where none existed before. This process of making goods which do not exactly meet all demands but which are very cheap is of increasing importance; Ford cars, Ingersoll watches, and the suggested standard ships are obvious examples.

In the case of parts of machinery, hand work is incapable of making the standardised parts required. Articles made by the same machine, however, are so exactly alike that complex machinery may be made up of interchangeable parts, so that if any one section is lost or broken it may be perfectly repaired; a separately made machine might be useless unless a particular screw could be remade. Interchangeable parts are of special importance in agricultural implements used perhaps hundreds of miles from the nearest repair shop, but there are great possibilities of an extended use of the principle in common life.

The wise extension of the use of machinery has a further value in that machine tending requires less specialised skill than hand work, though it often demands greater general intelligence. Thus the dependence of a worker on a particular process is lessened, for he can more easily move

from trade to trade. The conversion of factories into munition works offered no insuperable difficulties, for much of the skill developed in manufacture could be directly transferred to shell-making.

Machinery may thus greatly increase production, while able to make working conditions less dreary and freer from strain; it may economise labour and thus set energy free for other pursuits; machine work is so far uniform in its nature that it is now much easier to follow a new calling than in former times.

There is, of course, another side to this question: the worker, as producer, has always regarded the spread of mechanical processes with some suspicion, and not altogether without good reason from his point of view as an individual, as the experience of the Industrial Revolution, and the post-war years 1919 onward testifies.

Machinery only increases the demand for labour where the demand for the commodity produced is elastic and effective. Few commodities suitable for machine processes are likely to have a rigid demand, but elasticity of demand can vary widely. The elasticity of demand is of secondary importance practically, because producers are not likely to invest capital in machines for the production of goods for which there is no potential demand. Potential demand, however, may become actual demand only in the long run.

The effectiveness of demand is an independent question, and is bound up with the general condition of industry at home and abroad. If industry as a whole is depressed, the demand for commodities other than physical necessities is ineffective through lack of purchasing power. Under such circumstances every expansion of machine processes does tend to displace labour with little possibility of absorption elsewhere, and in periods of limited demand the instinct of self-preservation compels individual firms to compete more strenuously against their rivals and to

extend their machine processes with a view to lowering their expenses of production.

The problem, however, serious as it is for the individuals deprived of their livelihood, is much less a problem of machine production than one of eliminating those periodical depressions of trade, so marked a feature of industrial life since the beginning of the nineteenth century.

In a different order of economic society the extension of machine processes would be doubtless governed by conscious foresight and effected so gradually that the difficulties of transition would be largely smoothed away, but here we are concerned with what is, not with what might be.

It should also be noticed that under competitive private enterprise, specialisation, which is both a cause and an effect of the use of machinery, increases the tendency to instability of trade. The failure of one sub-process of production to function efficiently may throw the whole system, or at least a whole industry, out of gear.

Down to recent years these drawbacks have been short-period ones only. In the long run the balance of advantage has been enormously on the side of machinery, even from the standpoint of the labourer as producer; but whether this balance will persist in the future, so far as England is concerned, without a radical change in the economic system, falls beyond the scope of this book.

Rationalisation of industry is an attempt to meet some of these difficulties, and where the output of industry is scientifically adjusted to demand, some at least of the problems of automatic machinery in relation to labour may be solved.

14. Localisation of Industries

The principle of Localisation of Industries is firmly bound up with that of division of labour, and is really its spatial equivalent. Districts, like individuals, tend to specialise in certain directions and, as already shown, the

division of function is undertaken with a view to connecting different sections more intimately; specialisation is not a sign of aloofness of interests, but the very opposite. The arguments for and against division may be transferred almost unchanged to the case of localisation. A big industry is split into simpler components, which are separately more easily managed; cotton may be landed at Liverpool, spun at Oldham, woven at Bolton, stored at Manchester, and again exported from Liverpool. Thus Oldham may obtain a pre-eminence in spinning in the same way that an individual who has found his natural employment and who has followed it diligently may master his work. There is also the same economy of time, of machinery, and of materials. Again, just as a large factory covers less space than a large number of small sheds, so the concentration of particular operations in a certain town allows of a similar economy of space. All these factors make for localisation of industry.

Localisation also encourages the growth of trades in intimate contact with the main industry, and the concentration of these will lead to further economies; most trades require partly manufactured goods as "raw materials" while their own produce may feed another industry. If an industry is in close contact with effectively organised trades dependent on it, buying and selling are more easily and economically carried on; again, mere growth of population creates a ready market for commodities.

There is the same one-sidedness as in the case of division of labour, and the same tendency to dependence on a particular industry, leading at times to commercial depressions and so to unemployment; the presence of subsidiary industries, and still more of possible occupations not so dependent on the main industry, can do much to mitigate the severity of these depressions; again, the development of cheap transport and the diffusion of intelligence may increase the mobility of the worker and

allow him to find work in a locality where employment is more normal.

Communication is a vital factor: the better the means of communication, the more quickly the distributing forces will act. In one way, each trade will tend to move to its natural home, but this tendency may be offset by that of the producer to move towards his best market. Thus, while Lancashire has restricted its agriculture and specialised in cotton production, this manufacture tends to flood over into the West Riding; again, India, though formerly a great market for English textiles, has begun to make its own cloth. The linen industry has almost deserted England, but if much flax were grown here, it is probable that linen would again be woven near large industrial towns.

When an industry obtains a footing in a district, it is difficult to dislodge unless totally new conditions arise; and the start may be largely accidental; in many cases a particular district obtained an advantage in earlier times and has retained it because the presence of hereditary skill and established traditions has supplemented the advantage of localisation, especially if the district has been favoured by the march of events.

Sheffield became a steel centre largely because of the presence of good grindstones in the vicinity; the existence of coal, water-power, and iron ore has confirmed the initial advantage, and Sheffield is pre-eminent to-day, though local grindstones are a trivial factor, and though much of its ore is imported from abroad. Industries are growing along the main railway routes, *e.g.* iron at Wellingborough, but as yet the great industrial centres hold their own. The immense economies due to division and localisation are realised when we observe the import of bulky iron ore from Sweden and Spain, and of cotton from India and America; it is cheaper to import corn from the ends of the earth than to grow it at home, for it is profitable to send manufactured goods back to Asia and even America.

Thus the old manufacturing countries are still in some measure the workshops of the world.

Economies due to division of labour and localisation of industries affect production as a whole, and have drawn the lines of capitalistic manufacture to which individual manufacturers must conform; in the main, they are external economies. Those improvements for which individual business men are personally responsible and which chiefly aid the particular "house" are internal economies.

In a long-established industry, an old firm gradually perfects its methods; it learns to combine capital and labour in the best way and also to distribute the various units of these agents to the best advantage. Well-managed firms will survive and prosper, for though competitors share their external economies, the former will evolve internal economies which will give them the mastery. One firm will fail because it relies on labour rather than on fixed capital, and another because it has too little labour to work its plant fully and efficiently; one firm will buy its raw materials badly, and another mismanage its sales; there may be a lack of energy, or else effort may be misapplied through want of intelligence. A business man in command of capital may combine his units of capital in many ways but there is, theoretically at least, a method of combination which will "maximise" production for a given cost; as new internal economies appear, the ideal condition will be approached. In a stable state of industry, internal economies will automatically be selected by the principle of survival, *i.e.* the law of substitution of a superior for an inferior method, and will become common property in such a way that they will at last be hardly distinguishable from external economies.

The real driving force making for localisation of industries is that of minimum costs of production. Whenever a commodity is sold at a competitive price this

price tends to be uniform over its marketable area. From this fact it follows that if the commodity can be produced more cheaply in one place than in another, that place is the natural site for its manufacture, and that production can only be successfully carried on elsewhere if the forces of competition are artificially suspended by some means or other.

The factors that allow production to follow minimum costs vary with the nature of the commodity. In some cases climatic factors decide the issue, in others, transport facilities, in others, proximity to coalfields, and so on; and because of the diversity of these factors, probably no two commodities that are really different in kind can be produced with equal advantage in the same place, with the exception of the secondary industries which depend upon the primary one. This explains why cotton production has settled in Lancashire, the cloth trade in Yorkshire, the production of heavy iron goods near the Clyde and Tyne, and so forth. It is not possible to give a satisfactory explanation of every particular case, for some trades are localised largely because of historical and even accidental circumstances. But as a general rule the principle of minimum costs holds, and may be extended to subsidiary industries which tend to develop in the neighbourhood of the primary industry on which they depend. It was not an accident that the manufacture of textile machinery developed between Manchester and Leeds rather than in the "Black" country.

Localisation of industry is only the application of the principle of division of labour and specialisation outside of the individual firm, and it has an international aspect too. Indeed, but for the international localisation of industries little international trade could arise.

Minimum costs is a comprehensive term and includes many items. The question of localisation being affected by differences in wage levels can hardly arise in one

borrowed money; this may easily be done by an appropriate development of banking.

Again, small businesses may flourish if external economies become very important relatively to internal economies, for it is through the latter that large business flourishes. The diffusion of general intelligence, the distribution of specialised information, *e.g.* by Government departments or trade newspapers, and any other means which will allow a small employer to keep in touch with trade conditions and world movements, while allowing him to concentrate energy on his business, all serve to reduce the handicap under which he labours.

On the whole, although the growth in the size of individual business shows no immediate signs of slackening, a future development of small firms, or perhaps of groups of co-operative or semi-co-operative producers is not improbable, but the processes involved cannot be fully understood until Distribution is considered.

(2) INFLUENCE OF FIXED CAPITAL.—Large business is increasingly prominent where fixed capital is most expensive, particularly in transport (*e.g.* railways and steamships), in engineering, and in iron smelting. The question of overgrowth, leading to the choking of competition and to the development of trusts and cartels, must be postponed, but the presence of these huge monopolies may be noted. Even in retail trading there is a parallel process at work to be set against the growth of small industries in textile manufacture. The example of America may herald a growth of trusts in this country.

18. A General Survey of Industry

Three connecting threads are prominent in the industrial complex, and in each case historical explanation is required for full understanding: relics of most old-time processes still remain. First, there is the continuous series from

handwork to trust factories: the Swiss toy-maker still works by hand, requiring little capital or raw material; developing tools lead to machines, in which the actual process is not controlled by the fingers; the hand loom weaver leads to the factory worker, while the selling process is specialised; as fixed capital becomes important, the individual entrepreneurs are forced into collective action, and producers' groups appear which fix prices or amount of output, like the German "Cartels" or American "Pools"; in the last stage, a powerful group controls immense capital and closely supervises the inner economy of large businesses, forming a Holding Trust.

The type of the individual worker forms another connecting line. At the bottom (as regards money reward) is the unskilled labourer, whose work is almost purely physical. The highest productive type (in relation to present conditions of production) is the man whose work is purely mental, requiring specialised organising ability, though it does not follow that he is the most useful to humanity; between the two is a continuous chain, and the high reward of the more fortunate is a result partly of the comparative rarity of the requisite ability and partly of the difficulty of rising in the scale.

The last thread is more modern, and connects raw materials with finished manufactured goods. Agriculture and mining are the basal industries in two senses; they produce goods which are almost essential to existence, and also raw materials required for production of luxuries. Land gives food, and also makes manufacture possible. Raw materials are worked through successive stages; they are attracted forward through the successive production processes by the backward flow of money from the ultimate consumer to the owner of the mine or land.

Behind all is the directive brain of the entrepreneur, given his opportunity by the extension of credit and aided in his combining processes by the miracles of modern transport.

19. Transport

Credit will be fully considered in a later chapter; we may for the present regard it as the lubricator of the economic mechanism. Transport may be regarded either as a similar external aid to production or as an essential part of the process. Even manufactured goods are useful only in relation to the individual consumers, and from this standpoint the movement of matter in place does not differ from that of transformation of matter to another form, for both alike help to satisfy wants. The price of Canadian salmon or Arctic furs is made up almost wholly of transport charges, including profits of merchants. There is no fixed line separating production and trade. The manufacturer does not try to separate the cost of transport from the whole cost of his raw materials, nor does the consumer make such an estimation.

Viewed externally, transport is seen to help production in procuring raw materials and in marketing the final produce. Raw materials for a particular industry seldom occur together; cases like Middlesbrough, where coal, iron, and limestone, the materials for smelting, occur within a few miles of each other, are rare; Sheffield now relies on Sweden, Manchester on Egypt, India and America, and Bradford on Australia for raw materials, partly because of the start formerly gained by those manufacturing centres, but largely because of the efficiency of world transport. The same causes work as regards marketing: Lancashire sends back cotton goods to cotton-growing countries; more striking still, coals may figuratively be carried to Newcastle in the sense that goods may be exported to a country which could, if it chose, make them more cheaply than the exporters.

Roads and canals in the eighteenth century, and railways in the last century, have revolutionised internal trade, as perhaps roads may again do in the present century; steamships have almost created foreign commerce. The

stimulating effect on volume of production has been stupendous; on organisation, the effect has been peculiar, for many local industries have been killed through the concentration of production in more favourable districts. Roughly, it may be said that increased transport efficiency quickens those economic tendencies which are being opposed by custom and conservatism, as it widens markets, awakens competition, and aids those forces which are struggling for expression.

Transport, however, can have more than one effect. It does not always make for localisation of industry. In the nineteenth century canals and railways did assist the localisation of industries at certain points. Cheap road motor transport, on the other hand, seems to be working in the opposite direction, for since its development, industry has not only tended to move from the north to the south of England, but is becoming less localised. The reason is that mechanical road transport is less costly and much more mobile than the railway.

Probably transport represents a balance of good, though, as it usually represents a group of industries built on the large scale, the less pleasant side of fierce competition is often dominant. Apart from the beneficial effect on division and localisation, it spreads the good things of the earth over its surface; where superabundance in one country is exchanged for that of another there is a large consumers' surplus¹ created in each case.

Perhaps the most beneficent feature of transport is its linking power: the mutual aid of a Russian village community is outdone by a system of world inter-relationship. No country is economically independent, and each one has sacrificed part of its self-sufficiency, trusting to world transport to supply the goods it no longer produces; those goods it produces the most economically form its

¹ There is no objection to using this term in a general sense as used here. No quantitative measurement is implied.

own contribution to world welfare. It may be hoped that the beginnings of co-operation which transport has already stimulated will prove the precursors of a better economic world organisation. Though English co-operation in production is disappointing, the successes of co-operative farming, or at least the utilisation of farm products, which transport has stimulated in some continental countries (and in Ireland) point the way to future development.

20. Farming Organisation

We conclude with an account of organisation as found in farming. Agriculture differs in important respects from highly competitive large-scale business. Where perfect competition exists, the profits of an entrepreneur represent a positive contribution to production, but it will be seen later that the economic rent of land is a payment to a landlord for which he may give no corresponding aid to production. Thus the tenure of land merits attention.

The growth of population makes improved organisation possible, but this effect in an old country may possibly be balanced by that of the law of diminishing returns, so that the comparison with industry shows agriculture as an exception to the tendencies of the last century. Increasing returns hold even in agriculture with regard to labour and capital, but the importance of these is so small relatively to natural forces that the tendency to the increase in size of the individual business (*i.e.* farm) has been effectively held in check; farming is one of the most conservative types of production. At present, food production is bound to the land and this fact necessarily precludes effective localisation, and extensive cultivation necessitates a dispersion of labour and capital which prevents organisation being as effective in agriculture as in manufacture.

Again, farming requires men who can do many small duties at different times, performing perhaps a score of

different pieces of work in the day; such men must be ready to adapt themselves to changing weather and seasonal conditions; relatively, there are so few men on an ordinary farm that each must learn and perform most of the separate processes. Thus there is little room for division of labour, and the farmer himself, who corresponds to the entrepreneur (on the English system of farming) is likely to do some work identical with that done by his meanest labourer. Nature is predominant: while the manufacturer has turned the position, the farmer is still bound by natural limitations and, organise as he may, his progress under present conditions is limited. The same holds good for remarkable ability: unless an able man can so improve methods as to push back the working of diminishing returns, his organising powers will be more usefully employed in industry.

A tendency towards large-scale production exists in new and fertile lands, but after a time is opposed by diminishing returns. A large prairie clearing may employ many men in the aggregate, of such intelligence that they may be specialised not only as farm labourers, but also to use agricultural machinery. As regards the farming unit, the men are localised, so that modern methods of ploughing, reaping, etc., as well as of selling in bulk may be used to take over heavy work from the labourers. Within Nature's limitations immense savings may be effected. In manufacture "land" is subordinate to the other agents; in agriculture it is dominant, and economies are possible only with respect to the associated labour and capital.

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CHAPTER VIII

THE FACTORS OF PRODUCTION IN CO-OPERATION

1. Introduction

For the sake of convenience only, we have considered land, labour, capital, and organisation individually, and primarily without reference to each other, though this was not altogether possible in the case of organisation. Actually, of course, each factor has economic meaning solely in conjunction with the others, and in this chapter we shall examine several consequences of their co-operation.

2. The Optimum Business Unit

The word " optimum " has crept into economic literature only recently. It was probably used first in connection with population, to emphasise the relative, not absolute, size of the population desired in a given set of circumstances; and what can be said of population in this respect applies with equal force to the business unit and, indeed, to any particular industry considered as a whole. It follows, therefore, that, as soon as organisation is brought into relation with specific quantities of land, labour, liquid capital, machinery, and the various other resources involved in the working of a business, a highly complex problem is presented for study.

It has already been shown that diminishing returns is much less a law peculiar to agriculture than a law of the proportionate size of the factors combined for any productive purpose; for unless every factor is of just the requisite size to function, in conjunction with the others, to maximum efficiency, wastage in some direction or another obviously follows. In other words the returns are less

than they would have been under a superior combination of the resources employed.¹

Each type of industry, and most businesses within an industry, have their own special peculiarities with respect to the resources employed in the production of their products; or, to put the matter in another form, each set of resources in the various combinations required by different types of industry is weighted differently. Agriculture, for example, uses large supplies of land in conjunction with relatively small supplies of labour and machinery. The building trade, on the other hand, uses less land, at least from the point of view of area, combined with large resources of labour and finance, but machinery, marketing, and directive organisation are at a minimum. In engineering, land resources are negligible, but machinery, technology, and finance are of special importance. In some branches of industry, especially in those highly speculative because of the vagaries of demand, organisation and marketing receive extra weight.

What applies to any specific industry applies to every firm within the industry, though not necessarily in the same way; we shall therefore confine our discussion to the optimum firm without special regard to the industry to which it belongs.

Problems of industrial organisation are very closely connected with that of entrepreneurship. Except for certain purposes of analysis entrepreneurs do not form a distinct class but a series of classes which differ widely in ability, with respect to both co-ordinating power and uncertainty bearing. It is therefore not difficult to conceive the size of the firm, other things being equal, as a function of the ability of the entrepreneur.

It follows from the above that the size of a business unit is not a matter of arbitrary decision but is determined by definite principles. For any industry, during a given

¹ In a proportional sense.

period of time, there is a particular-sized business unit which functions a little more efficiently than it would if it were slightly enlarged or, on the other hand, slightly curtailed. This unit is called the optimum unit, or the optimum firm, and so long as conditions remain constant, to take the producer's point of view, this firm will produce its products at the minimum average cost per unit, *i.e.* if we include all the expenses that must be covered in the long period.

But before proceeding further it is necessary to draw a clear distinction between the optimum unit and what Marshall called the "representative firm." Marshall meant by the term "representative firm" a firm working under average conditions and at average efficiency; a firm that might be used as a standard of reference, for clearly comparison with a firm working under exceptional conditions, either good or bad, would give a misleading impression.

The conception of the "representative firm," like that of Ricardo's "economic man," is too abstract and static to have much practical utility; and in any case it remains on the surface of things.¹ The "optimum" firm, on the other hand, is a concrete possibility: it is the unit of size which conscious direction and the forces of competition compel all firms to attempt to approach who wish to survive in the struggle for existence.

The optimum is not a fixed point, except over a short period. Like the size of the most efficient population it is a relative and not an absolute concept. What is the

¹ Opinions differ as to what Marshall really had in mind, but the fact that industrial conditions are essentially dynamic would appear to make it impossible in practice to locate the representative firm of any industry. Even if it could be located at a point in time there is no reason to suppose that such a firm would continue to be representative over any but a very short period. Professor Robbins has pointed out in the *Economic Journal* (1928) that Marshall did not find it necessary to introduce into the subject the concept of a representative piece of land or a representative labourer.

optimum in relation to a given set of resources, changes with every modification in one or more of those factors. Technical progress, improvements in the art of marketing, and new facilities for the acquisition of capital may change the size of the optimum unit very considerably in an upward direction; on the other hand, new difficulties in the way of obtaining command over one or more types of resources may move the optimum in a reverse direction.

To what extent any particular firm will approach the optimum depends upon the nature of its business. It may conceivably happen that, when a firm has reached the optimum size with respect to one set of resources, technology or organisation, for example, it has reached the optimum in relation to all other types of resources employed. Some industries have greater advantages in this respect than others. As a rule, however, experience proves that the optimum with respect to one set of resources is attained at a size that differs widely from that of the optimum with respect to the others. Not the least of the problems which the modern entrepreneur has to solve is that arising out of this difficulty; and the attempts to find a solution have had important reactions on the structure of modern business.

For example, the single large compact firm to be met with everywhere is largely due to the fact that the optimum size from the standpoint of directive organisation is much larger than that of the other resources. The necessary adjustment in the proportions of the factors may be made by using multiples of the optima of other resources. This means that under one roof we have several complete units directed from a single centre.

In the engineering industries there is a natural tendency for the optimum from the point of view of technology to be larger than that of directive organisation. Some firms therefore hand over one or more of the stages intermediate to the final product to other firms, and as some of these

processes can be very conveniently undertaken by small-scale firms we have a sound reason why this type of business has persisted and why it is likely to persist so long as it is a necessary adjunct to the optimum of some large-scale firm.

In many cases, however, a business subdivides, and executes one process in one place and another elsewhere, at points specially favourable with respect to transport, raw materials, and other conveniences. This case is really lateral or vertical integration according to the nature of the business, and may take the form of an ultimate unitary business or of a federal association of some form or other. Concrete examples will readily occur to the reader. Great concerns like John Brown, and Vickers are cases in point, and, as is well known, Morris motors are assembled from parts that are made by branches of that firm in several places.¹

Optimum problems provide a clue to many peculiarities of business structure that otherwise appear to result from purely accidental circumstances. It is not an accident that spinning and weaving have remained distinct trades in Lancashire and Yorkshire, and that in the textile industries generally the finishing branches are usually conducted on a larger scale than the early operations.

Optimum considerations explain the tendency to vertical integration in the primary metal industries and the persistence of small-scale industry in many branches of production of light iron goods. The rise of the big store and multiple shop is closely connected with the optimum aspect of marketing.

The above considerations are purely general, although they describe a tendency more or less present in all industries, the tendency to keep the average costs of production as low as possible. Whether an optimum firm actually exists or not is more doubtful for reasons that have already been noted. If competition were perfect, the tendency for

¹ On this point, Robinson: *Structure of Competitive Industry* is very valuable.

firms to be of the optimum size would be very strong, for perfect competition would force down the demand price for any commodity to that of its cost of production in a firm of the most efficient size. Any firm that produced more or less of output than the optimum firm would produce it at a higher average cost; it would therefore be working at a loss, and would be forced out of business. Under conditions of perfect competition, only a firm of the optimum size would cover its costs.

When competition is not perfect the problem is more complex. Up to a certain point, a firm still has an incentive to seek to reduce its average costs, but if its output is large in relation to the total output of the industry, it may not be possible to market an increased output without lowering selling prices. In that case it may not pay to expand output to lower average costs as the revenue lost through the fall in selling prices might outweigh the saving in costs.

It should be noticed that when a firm is of optimum size, its marginal costs will be equal to its average costs of production. If the cost of an extra unit is greater than the existing average costs, average costs will rise if that unit is produced. Conversely, if the cost of producing an extra unit is less than the existing average costs, average costs will fall if that unit is produced. As a firm is of optimum size when its average costs have ceased to fall, and have not yet begun to rise, it is evident that in such a position, average and marginal costs must coincide.

The connection between the movement for the rationalisation of industry and the search for the optimum size of any industry as a whole is very close. What applies to any business unit applies with equal force to the whole of that industry of which it is a member.

An industry which has reached optimum size in relation to one set of conditions may become unwieldy should those conditions change with respect to technical progress or markets. In a certain sense a trade depression may be

regarded as the action of forces compelling a natural movement towards a new optimum. Rationalisation is the working out of forces deliberately and scientifically to the same objective. That is really what is meant by the expression consciously adjusting output to the demand, instead of allowing equilibrium to be effected by the free play of natural forces. The argument in support is that natural forces adjust themselves too slowly and with too much waste in this ultra-dynamic modern world.¹

3. Law of Increasing Returns

If the optimum business unit has a definite relation to the law of diminishing returns, it has a connection equally clear with another economic law, that of increasing returns; and this law, like the former, has been obscured by perplexities that have troubled many thinkers.

The "classical" economists described increasing returns as a law of industry, no doubt for the same reasons which led them to regard diminishing returns as peculiar to agriculture. Unfortunately they treated as simple, phenomena which in reality are highly complex.

Diminishing returns, as we have already noted, is more correctly described as a law of defective proportions of factors combined for the purposes of production. But if these factors can be associated in unsuitable quantities, it follows that in some cases, by increasing some factors and decreasing others we can make adjustments which will result in the combination functioning more efficiently.

If, therefore, we start with a poor combination of factors and gradually adjust them with a view to increasing their efficiency, the returns will increase until we reach the point of perfect adjustment for that particular combination, *i.e.* the optimum. Once this point is passed, the returns

¹ See Mond: *Politics and Industry*. Chapter on Rationalisation of Industry.

will begin to decrease, unless the circumstances are such that, when we continue to expand one factor, it is possible to expand all the others in the same proportion. This case is not always possible, but where it can be accomplished, a new optimum is reached later in the shape of a larger firm.

From this point of view it is not illogical to refuse to recognise diminishing or increasing returns as a separate law, and to regard each as a particular aspect of the law of proportionate parts—as a movement away from, or towards, the optimum.

As a concrete illustration we can take the case of a firm organised for a certain output, and working short time owing to a trade depression. When demand falls away, diminishing returns, in the sense of rising average costs of production, sets in as there are certain charges, rent, rates, interest on borrowed capital, etc., that cannot be reduced immediately. As trade revives, and output again expands, average costs gradually fall until the firm reaches the maximum output for which it was organised.

But before developing the argument further, it should be noted that the approach to the optimum can be assisted or impeded by the nature of the resources used. So far we have assumed that the factors entering into each combination, if not infinitely divisible, can at any rate be used in progressively increasing or diminishing quantities. Now if this were always the case, and if each factor were unlimited in quantity and equally readily accessible, it is not difficult to see that diminishing returns in industry would be largely a question of bad judgment.

In actual practice, however, different types of resources not only vary widely with respect to the ease or the difficulty of increasing their supply, but some of them can only be used at a given time in fixed quantities. Fuel or power, for example, can be used in any quantities we desire, and so can labour, but a building, a furnace, or a machine

is a unit of fixed size for immediate purposes. Factors of this type cannot without waste be adjusted in an upward or downward direction to meet short-period fluctuations in demand, and it is on this point that the real significance of diminishing returns hinges; but we shall return to this matter in connexion with the effects of a sudden expansion of the output of an industry.

The fact that certain resources are indivisible and usually can only be employed on a large scale, leads us to a consideration of increasing returns from the point of view of increasing size of operations.

In most branches of production there are factors that must be of a certain size to be used at all. Once installed, however, they make possible a greater degree of specialisation among the other co-operating factors. There are also factors of production whose cost of installation does not increase proportionately with the size of the plant; an electric motor, for example; indeed, in most cases, technical progress leads to methods that can be profitably applied only for a large output.

In some cases, enlarging the scale of output may make possible a better utilisation of existing factors so that many items of expenditure may increase in a smaller proportion than output increases; average costs thus fall as output expands. If a coal factor with a given volume of business required one horse and wagon, it does not follow that if his business increased fivefold he would need five horses and wagons; probably not more than three would be necessary; and similar economies would probably be effected in various ways.

The advantages of large scale production, however, are not limited to internal economies within the firm. The average costs of every firm within an industry may be lowered by an expansion of the industry as a whole. Such economies are called external economies, and they are very important, and diverse. The expansion of an industry

may lower the prices of the means of production which each firm employs by enabling them to be produced in greater quantities, and as a rule, more cheaply. It may also lead to improved, and cheaper means of transport and marketing facilities. In some cases it is possible for external economies to more than offset a tendency to rising average costs within the individual firm.

Increasing returns can persist in an industry over a long period only if internal and external economies lower average costs in a greater ratio than the increasing scarcity of the factors of production tends to raise them.

The advantages accruing solely from the size of an enterprise are not independent of the law of the right proportions of the parts. This operates whatever the scale of the enterprise, and in the actual industrial world tends probably, after a certain stage has been reached, to set a limit to the growth of a business unit, as the relative scarcity of certain types of resources may more than counterbalance the advantage due solely to the scale of operations.

The optimum business unit will be therefore the resultant of two distinct forces, the optimum from the point of view of advantage of size, and the optimum from the point of view of a perfectly proportioned combination of factors.

It cannot be too strongly emphasised that these conceptions, whichever type of optimum we have in mind, are essentially dynamic. They are fixed points only so long as all the conditions on which they depend are constant; but as these conditions fluctuate a good deal over long periods, optimum points may move in either direction.

The rigid division of industries into two distinct classes, those that always follow the law of diminishing, and those that always follow the law of increasing, returns, is both inaccurate and misleading.

Another inaccuracy which should be noticed relates to the translating of the marginal unit in either case into terms

vary the necessary proportions between the different factors of production.

The relationship between the different possible combinations of factors of production, and their output, is called the production function for that output. A change in the production function means that changes in the technique of production have altered the relationship between the factors of production and their output.

6. Factors that Limit the Size of a Firm

We have already considered this question indirectly, and in a general way; it now remains to examine it a little more closely from the point of view of the individual producer.

Whenever a producer wishes to expand the size of his business he must borrow further capital, and although this may not be a difficult matter up to a point, yet beyond that point the difficulties grow cumulatively. For one reason, the larger the borrowing and the more difficult it is to provide the necessary security. The difficulty of obtaining the necessary supplies of capital thus tends to impose a limit on the growth of a firm.

Secondly, as the firm grows in size so grow the difficulties of organisation, and defects in organisation lead to waste and rising average costs. Even if the producer could obtain cheaply, and without difficulty, the necessary supplies of capital, and other factors of production, if his business increased beyond a certain size his average costs of production would begin to rise on account of the difficulties of organisation.

But there is another, and more important reason why any firm cannot continue to grow indefinitely. When a firm in any industry reaches a certain size its output becomes an important fraction of the total supply. That means that every additional unit of output can only be marketed by reducing selling prices, not only of that one,

but of all other unsold units. Even if average costs continued to fall slightly, a point is likely to be reached at which the income from the sale of a further unit of output is less than its cost of production. This is still more true if average costs remain constant, or begin to rise, and in the case of a super-giant firm the output is likely to be such that average costs will begin to rise, for the firm's demand for some scarce factors of production may raise their hire prices in a greater ratio than the economies resulting from technical improvements within the firm. No firm will expand to the point at which its total revenue from the sale of its output is less than its total costs of production. In some industries, firms may grow to a very large size before approaching this limit, but in every industry there is a limit beyond which no firm will pass.

The difficulty of avoiding waste as the scale of organisation grows is an argument for the retention of the middleman. The middleman is often condemned as a parasite, and firms often advertise that their products are cheaper as they sell directly to the consumer.

In some cases that may be true, but it does not follow that the universal elimination of the middleman would be an economic advantage. The middleman represents a link in the chain of specialisation, and if the producer took over his functions in every case, the work would probably be done less efficiently, and the organisation of the firm may easily become top-heavy, and thus lead to economic waste.

7. Reasons for the Survival of the Small Firm

In the middle of the last century it was freely prophesied that the small firm must inevitably disappear, but that prophecy has not been fulfilled for two reasons. In the first place not every form of production is suited to large-scale organisation. In some forms of production such as high-class tailoring, for example, the direct personal supervision that is necessary cannot be furnished by the

large-scale firms. More generally, wherever a product is highly specialised so that its output is necessarily small, only small-scale production is practicable.

That is also true, though for somewhat different reasons, of such industries as agriculture and house-building. These industries are more or less speculative, and demand more initiative and flexibility of organisation than is normally associated with the large-scale firm.

But the small firm can, and does, persist even in lines of production in which the conditions are favourable to the large-scale firm. The reason, as has already been noted, is connected with the optimum position of the large firm. When the large firm reaches a certain size it is often profitable to hand over a process to a small specialised firm as in that way it avoids certain difficulties of organisation. Small firms of this kind are never likely to disappear as their existence is necessary to the optimum position of some larger firm.

8. The Distribution of the Factors of Production between the Different Lines of Production

Producers in different lines of production compete against each other for the services of the different factors of production. As a rule, the proportions in which these factors must be combined can be varied so producers will hire these factors in proportions that are fixed by the prices which they must pay for them.

Clearly, it will be to the advantage of each producer to raise the largest possible output for any given expenditure on factors of production. He will hire the factors of production, therefore, in such proportions that their marginal products are proportional to their prices; or, in other words, in such proportions that an extra unit of money spent on any one factor would increase the output by the same number of units as it would if spent on any other factor, for if a unit of money spent on one factor

would increase the output by a greater number of units than if spent on another factor, it is evident that the output could be increased by changing the proportions of the factors without altering the total expenditure.

The marginal productivity of the factors, however, depends on the proportions in which the factors are combined, and not on the scale of production. Proportionality between marginal products and prices of production factors will not decide, therefore, the total quantity of each factor that will be hired in each line of production.

The market for factors of production will be in equilibrium only when each factor is used to the maximum advantage, and as under free competition its price must be the same in every line of production, it follows that each factor will be employed to its maximum advantage when its marginal product is the same in every line of production. If that were not the case the output of the system as a whole could be increased by a transfer of units of factors from lines of production in which their marginal productivity was low, to lines of production in which their marginal productivity was high. A comparison between the marginal productivities of a factor in different lines of production can be made through the money values of the products.

If a producer finds, when he has established proportionality between the marginal products of his factors, and their prices, that the marginal value of the product is greater than these prices, it will pay him to expand output by increasing the quantity of all his factors of production in the same proportion, and this applies to the whole of the industry as well as to the individual firm. But as output expands, the price of each unit of it will fall on the commodity market. In equilibrium, therefore, the output of any industry must be such that its price on the commodity market will establish equality between the marginal product of each factor and its hire price. In this way the

quantity of each factor hired in every line of production will be determined.

Economists usually approach the factors of production from the point of view that it is an economic disadvantage if all factors are not employed to full capacity, but to this general rule there are exceptions in certain circumstances.

Some factors of production like land and mines vary widely in quality, so that if we could produce all the food and coal that we require by concentrating production on the best land and mines, the average cost of production of these commodities would be reduced. If the economic system were perfectly fluid and competitive, the better qualities of the factors of production would always be worked up to maximum capacity before the inferior grades were utilised at all. The actual economic system, however, abounds in frictions, with the result that some factors of production are used when it would be more profitable, in the interests of the community, to allow them to stand idle and to transfer the co-operating factors elsewhere. Advocates of the nationalisation of the coal mines have frequently argued that, if the State acquired control of the mines, production would be concentrated at the best seams, and that the worst pits would be abandoned. In that way the costs of production of coal would be lowered. This argument, however, is only rigidly true to the extent that the best seams can satisfy the demand for coal.

Much the same argument holds with respect to machines. At any time, and for many and various reasons, much machinery in most industries is really obsolete in the sense that technical science and inventors have provided better means of production for those producers able and willing to adopt them. Clearly, it would be in the interests of the community if all such plant were "scrapped," however good it may be, in order to make way for better and cheaper methods of production, provided that the reserves

of capital in the country were large enough to allow this to be done without injury to other parts of the economic system.

9. Some Effects of an Expansion of Output, etc.

In the following sections, certain phenomena will be considered primarily from the supply side. This is an arbitrary procedure, but it will permit us to examine without confusion certain matters in greater detail than would otherwise be possible. As a rule, demand and price will be taken for granted.

The expansion of output of any industry has effects that are highly complex and may be considered in various aspects.

In the first place, a distinction must be made between the short and the long period. Over a short period, it is highly probable that, whatever the nature of the industry in question, a sudden expansion of output would be accompanied by diminishing returns for various reasons. It is unlikely that all the resources entering into the production of its products would be expanded with equal ease and, in consequence, in the same proportion.

Some factor, or subdivision of a factor, would tend to lag, either because it is physically impossible to augment the supply at short notice or because the resources in question are more urgently demanded elsewhere.

In the first case the returns would diminish proportionally, though not necessarily absolutely; while in the second case, if the necessary price were paid for these scarce resources, production would be attended by increasing costs; if not, the output would diminish in a proportional sense as before. Where the resources are not physically scarce, the price would be paid, if the increased output were a response to a very urgent demand, and the new supply would be obtained at increasing costs.

As a rule, however, this would be a temporary phenomenon only. In time, the deficiency in the one or more types of resources would gradually be remedied and the factors would be adjusted with a tendency towards optimum proportions. If the deficient factor were raw materials, the higher price paid for them would attract extra resources into that channel of production; and in the case of a deficient supply of specialised labour, the necessary supply would be trained in the course of time or attracted by scarcity payments from other occupations. As the factors were gradually adjusted proportionally, increasing returns would result from the greater scale of operations, until a new optimum be established on the basis of a larger supply at a lower average cost than before the initial change.

One or two qualifications are necessary to the above general statement. We have said that a sudden expansion of output would be likely to be attended by diminishing returns for a time, owing to the lag in expansion of certain types of resources. But this depends on the nature of the industry and the extent to which it is dependent on highly specialised resources, whether of fixed capital or labour. English agriculture, if the importation of foreign foodstuffs were restricted, would be temporarily affected by a shortage of land.

There is another consideration, however, of not less importance, and that is the general position of the industry at the point of initial change.

If output were expanded during a period of general depression, the conditions for expansion would be very different from those of the previous assumption. The fixed capital of the industry would be working below its optimum capacity, and, in addition to that, raw materials and non-specialised labour would be available at a low price. Further, the fact that the industry was working below its maximum capacity would make possible some of the economies of a larger-scale production.

Even over the short period it does not necessarily follow that expansion of output would be accompanied with diminishing returns and increasing costs. During a boom period the converse considerations would apply.

The effects of a reduction of output will vary with circumstances. If an industry were working under conditions of decreasing costs or at optimum capacity, then with a reduction of output, costs would increase over a short period, as many fixed charges could not be immediately reduced. On the other hand, where an industry was working a dominant factor beyond its optimum point, *i.e.* under decreasing returns, the tendency would be towards decreasing costs, as the pressure on an important scarce factor would be relieved. In the coal industry, difficult and costly seams would tend to be abandoned; and the same would apply to very poor agricultural land.

But qualifications are always necessary unless a specific case is under review in which all the facts are known. Even in the case of industries using dominant factors in a state of diminishing returns, adjustments are made only slowly. We have used the term industry for convenience, and so as to present the argument as broadly as possible. In practice, an industry is usually a number of competing firms, and a reduction of output would intensify the struggle between these competitors. Adjustments would be made by the least efficient firms going out of business, a relatively slow process.¹ In the long run, with a reduction of output an industry which was working under decreasing returns or under increasing costs would be stabilised on the basis of a smaller output at a lower cost per unit; and the opposite would be the case with an industry which, before the change, had been working under decreasing costs or at the lowest cost level.

¹ But not always. Firms high up in the scale of efficiency might go over to some alternative employment.

The distinction is a little arbitrary, because during the period of adjustment the conditions of industry may have so changed from the standpoint of technical progress that every type of industry may be producing a smaller output at a higher cost per unit than would have been the case with the original output.

10. Costs of Production

So far, costs and prices have been treated incidentally; it is necessary now to take into consideration the expenses of production a little more clearly.

In an earlier chapter, Ricardo's doctrine of the real costs of production was rejected, as was also Marshall's dualism of real costs and demand. But, as we have already conceded, expenses of production, while they are not an ultimate determinant of value, exercise a real influence on the amount of the supply of any commodity. These expenses are the monetary costs or hires paid out by the entrepreneur. He, of course, is not concerned with the ultimate philosophical nature of phenomena, but with the immediate fact that to obtain command over a set of scarce resources he must pay a price or hire for them; and unless he can recover these expenses, including remuneration for management, from the price of his products, he will employ his resources in more lucrative channels, which means that supplies of a specific product will be decreased. In the long run, where competition is not impeded, the forces of competition will establish a coincidence between the supply price and the entrepreneur's expenses, including average profits.

This leads us to a point of cardinal importance. When we use the term costs or expenses, which are implied? Those of the optimum or lowest-cost firm, those of the average firm, or those of the least efficient firm?

Obviously no firm can continue producing at a loss indefinitely. Over a short period it may, trusting to

better times; and if its fixed capital includes highly specialised and expensive machinery, it will probably do so over a fairly long period; but in the long run, machinery, as it becomes worn out or obsolete, will not be replaced, and the firm will gradually pass out of business if the conditions of demand remain constant.

Now the firm that will first disappear will be most probably the one with the highest expenses per unit of output, *i.e.* the one working under the least advantageous conditions; and in any given system of supply this will be the marginal firm. When this one has disappeared, the firm next in the scale will become marginal under the new system of supply, and unless this one also can recover its expenses in the long run, it too will disappear like the first. Should, however, the conditions of demand change with the increasing scarcity of the product the margin will move in the opposite direction. The margin is not a fixed point, but one that moves with changes in demand and price.

From the entrepreneur's point of view, it is the marginal expenses of production that govern supply prices over a long period. If the supply price were much above this in any specific line of production, resources would be attracted from other branches of production, *i.e.* new firms would open out; and if demand remained unchanged, the increased supply would force down prices and the margin, until supply prices and costs coincided; assuming always the absence of restrictions on movement.

So far, in this section, we have treated the marginal firm and marginal costs in the traditional manner. One or two matters, therefore, need further explanation.

We have defined the marginal firm as the one working under the least advantageous conditions or as the least efficient firm; and from the producers' point of view this is not without justification, for in certain industries (coal mining is a good example) the fact that conditions of production are far from uniform needs no special

explanation. But it cannot be too strongly emphasised that in the last analysis the margin does not depend on the existence of inferior firms, or on differential conditions, as has usually been supposed since the days of Ricardo.

If, in an industry, all the firms were of equal efficiency and were working under identical conditions, the margin would still be there—at the point where the supply is just sufficient to satisfy the demand at a given price. If the producers created a supply in excess of this amount, the falling demand price would make it impossible for all the expenses of production to be covered, and supply would gradually be reduced as on the former argument. The precise manner in which the reduction would be effected is irrelevant to the issue. The producers might agree to voluntarily suspend competition and to limit their output. In this case the marginal product would not be the product of a specific firm but that part of the output under consideration of being abandoned. But it is just as likely that certain firms would find it more profitable to transfer part or the whole of their productive resources to some alternative channel. In such cases the firm undecided which alternative to adopt, to stay in or to go out, would be the marginal firm. If it deflects only part of its productive resources into some alternative channel, the output thus lost to the original use would be the marginal output.¹

It is true, no doubt, that such a firm may be the one working under the least advantageous conditions, but it is not likely to be the least efficient firm from the standpoint of organisation and enterprise. It seems more reasonable to suppose that a firm much higher in the scale would be the first to consider the advantages of some alternative employment. This qualification alone shows how misleading it is to always define the marginal firm as the

¹ See Davenport: *Economics of Enterprise* for an excellent discussion on business margins.

least efficient or the one working under the least advantageous conditions,¹ because such a definition breaks the intimate relation between the margin and the volume of the supply as a function of demand at given prices. Deduct these facts, and the margin has no real economic meaning.

The traditional definition of the marginal firm has had misleading consequences in another direction. By giving undue emphasis to secondary and accidental phenomena, marginal expenses appeared as an independent category to which normal prices must conform. This, however, is to substitute an effect for a cause. It should now be clear that marginal expenses do not govern price. Price is governed solely by the relative scarcity of the supply in conjunction with the alternative uses for the productive resources in relation to the demand. It is the volume of a supply necessary to satisfy a demand when price is fixed that decides the position of the margin. Marginal expenses are thus not a final and independent category.

11. Special Importance of Marginal Costs

But although marginal costs are not the ultimate determinant of market prices, from the point of view of the producer they limit the size of output. We have already noticed that costs per unit of output or, what comes to the same thing if we start from changes in total costs, average costs² increase or decrease, or remain practically constant as the total volume of output changes. Marginal costs, too, can change in a similar fashion. They can rise, fall, or remain constant, and they can be greater or less than, or equal to, average or unit costs, whichever point of view we adopt.

¹ Hobson : *Economics of Distribution* discusses alternatives in connection with land.

² The term average cost, though not so convenient in compiling imaginary schedules, is more in accordance with actual practice as it is more natural to find the unit cost from the observed total than *vice versa*.

The following simple illustrations should make the matter clear; the figures are arbitrary, and have no reference to any concrete case.

NO. OF UNITS	COST PER UNIT OR AVERAGE COST	TOTAL COST	MARGINAL COST
10	10/-	100/-	—
11	11/-	121/-	21/-
12	12/-	144/-	23/-
13	13/-	169/-	25/-

In the above example both the average costs and the marginal costs are increasing, and the marginal costs are greater than the average costs.

By a slight alteration of the figures we get the following results:—

NO. OF UNITS	COST PER UNIT OR AVERAGE COST	TOTAL COST	MARGINAL COST
10	16/-	160/-	—
11	15/-	165/-	5/-
12	14/-	168/-	3/-
13	13/-	169/-	1/-

In this case, both the average and marginal are decreasing, and the marginal costs are less than the average costs.

That under constant returns the average and marginal costs are equal is evident from the following:—

NO. OF UNITS	COST PER UNIT OR AVERAGE COST	TOTAL COST	MARGINAL COST
10	10/-	100/-	—
11	10/-	110/-	10/-
12	10/-	120/-	10/-
13	10/-	130/-	10/-

But the possibilities are not yet exhausted. Consider the following imaginary schedule:—

NO. OF UNITS	UNIT OR AVERAGE COST	TOTAL COST	MARGINAL COST
10	10/-	100/-	—
12	9/-	108/-	8/-
14	8/-	112/-	4/-
16	7/3	116/-	4/-
18	6/8	120/-	4/-
20	6/3	125/-	5/-
22	6/-	132/-	7/-

In examples (1) and (2) we assumed the unit or average cost to change uniformly with the output. In these cases the average cost is falling all the time.

But the average cost per unit of output need not always fall at the same rate, as in example (4). Here the marginal costs first fall, then are constant, and later begin to rise. If we continued the table the average cost would reach a minimum, after which it would probably rise again.

We have noted that under constant returns average and marginal costs are constant and equal, but it is possible for average or unit costs to be falling while marginal costs remain constant.

NO. OF UNITS	UNIT OR AVERAGE COSTS	TOTAL COSTS	MARGINAL COSTS
1	£510	£510	—
2	£260	£520	£10
3	£176 $\frac{2}{3}$	£530	£10
4	£135	£540	£10
5	£110	£550	£10

The reason for this, at first sight curious, result is that, as a glance at the Total Cost column suggests, cost per unit

is made up of two items, a large constant factor and a small variable one. An expensive machine used for shaping articles by a simple process, in which the costs of materials and other charges were relatively small and varied uniformly with the output, would agree with the above example.

Consider now the following imaginary schedule:—

NO. OF UNITS	UNIT OR AVERAGE COSTS*	SELLING PRICE	TOTAL COSTS	TOTAL REV.	MARGINAL COSTS	MARGINAL REV.
11	8/11	20/3	98/1	222/9a	—	—
12	8/9	19/11	105/-	239/-b	6/11	16/3†
13	8/7	19/3	111/7	250/3	6/7	11/3
14	8/5	18/6	117/10	259/-	6/3	8/9
15	8/3	17/9	123/9	266/3	5/11	7/3
16	8/1½	17/-	129/6	272/-	5/9	5/9
17	8/-	16/3	136/-	276/3	6/6	4/3
18	7/11	15/6	142/6	279/-	6/6	2/9
19	7/10½	14/9½	150/0½	281/5½	7/6½	2/5½
20	7/10½	14/1½	157/11	282/6	7/10½	1/0½
21	7/11	13/3	166/3	278/3	8/4	—

* These costs are assumed to be entrepreneur's expenses purely. They do not include normal profits. † $16/3 = b - a$; and so on.

The influence of normal profits will be shown later. In the above schedule normal profits = $6/2½$; i.e. $14/1½ - 7/10½$.

When the output has reached 19 units we have made the average costs constant. They cannot decrease below a certain point under any given set of conditions, and under any circumstances, they cannot be zero. Hence after a certain output has been reached they are likely to remain constant for a time; then, unless the conditions change, to increase. In such a case, a period of constant costs would probably be followed by a period of rising costs as shown in the schedule with an output of 21 units; and it should be noticed that the marginal costs are greater than the average costs. In this hypothetical case, at 21 units the marginal revenue is a negative quantity. This is purely a

coincidence, but it is obvious that if production is continued this must be the ultimate result.

Down to an output of 16 units, both the average and marginal costs are falling, and at this point the marginal costs are equal to the marginal revenue. For the individual firm, equilibrium point would be reached at 16 units, because the production of an extra unit would involve a greater cost than the revenue derived from it. Down to 15 units, with every expansion per unit of output the additional revenue has exceeded the additional costs, but after 16 units the position is reversed.

A little calculation will show that down to 15 units the profits of the firm are steadily increasing; they are at a maximum at 15 and 16 units, after which they decline rapidly. Where the competition is imperfect, the output would be probably 15 units at a selling price of 17/9 each; in this case there would be little inducement to produce the sixteenth unit because the total profit would remain constant as the revenue derived from the extra unit would balance its cost of production. Incidentally, it should be noted, very useful and instructive curves of average costs, marginal costs, and marginal revenue can be plotted.

It does not follow, however, that, if there were a large number of firms competing in an industry, 16 units would be the equilibrium point for the industry as a whole, *i.e.* the point at which profits for each firm are normal and the conditions such that the number of firms in the industry cannot be changed with advantage. Extra profit is still being made; new firms would compete until the average cost was at a minimum and coincided with marginal costs. But the output would not expand beyond 20 units, because even with constant costs, if the selling price for 21 units fell below 13/10 per unit, the revenue from the additional unit above 20 would be less than marginal and average costs.

The industry as a whole would be in full equilibrium when average and marginal costs coincide at a point where average costs are at a minimum:—

NO. OF UNITS	AVERAGE COSTS, EXCLUDING NORMAL PROFITS	SELLING PRICE	TOTAL COSTS	TOTAL REVENUE	MARGINAL COSTS	MARGINAL REVENUE
8	16/-	21/-	128/-	168/-	—	—
9	15/-	20 ⁵ / ₈ /-	135/-	185/-	7/-	17/-
10	15/-	20/-	150/-	200/-	15/-	15/-
11	15/6	19/6	170/6	214/6	20/6	14/6

Now one condition for full equilibrium is that selling price = average costs plus normal profits. Normal profits per unit of output must therefore = $(20/- - 15/-) = 5/-$.¹

The profits for the different outputs can be arranged as follows:—

NO. OF UNITS	TOTAL PROFITS	NORMAL PROFITS	SURPLUS PROFITS
8	40/-	$8 \times 5 = 40/-$	—
9	50/-	$9 \times 5 = 45/-$	5/-
10	50/-	$10 \times 5 = 50/-$	—
11	44/-	$11 \times 5 = 55/-$	—11/-

With an output of 8 units the industry as a whole is earning normal profits. There is therefore no reason for existing firms to leave, or for new firms to be attracted to, the industry. But the existing firms have a motive for expanding output because average costs are not at a minimum. This means that, by a rearrangement of the factors of production, average costs can be lowered. Production would therefore expand to the 9th unit, and with 9 units of output an excess profit of 5/- is earned.

¹ It is more usual to include normal profits under costs, but they are separated here for greater clearness.

But the industry is now relatively more attractive, as surplus profits are being earned. New firms would enter the industry or existing firms would increase their output, and the 10th unit would appear. But with 10 units on the market, excess profits vanish; and if 11 units were produced, less than normal profits would be earned and output would contract. At 10 units, therefore, the industry is in full equilibrium. Apart from the question of profits, there is no advantage in retreating to 9 units, because the saving in costs is just equal to the loss in revenue, so that if the excess profits at 9 units were relatively small, potential competition alone would suffice to keep production to 10 units. Further, with respect to an increase up to 11 units, not only would less than normal profits be earned, but the additional unit would involve a greater cost than the revenue derived from it.

All the above schedules are purely hypothetical and are only intended as simple illustrations of points that are usually treated by mathematical methods. Concrete cases are highly complex because the supply-and-demand curves, from the point of view of the entrepreneur, can be related in multiple ways. The schedules should make clear the vital connection between margins and output. It has often been supposed that it is the average costs that determine the size of the output, but this is incorrect. It is possible in some industries for the same plant to be required whether the output is small or large, so that with a progressive expansion of the output the average costs may fall for a long period. But it does not follow that the output will necessarily be expanded, because the marginal costs may rise as the output increases, and rising marginal costs exert a more powerful influence in limiting output than falling average costs do in expanding it.

which would only appear at a definite price, as in the following table.

The producers might be induced to put on the market the following amounts at different prices (the figures given are purely arbitrary):—

At 10/- per unit, producers might offer 1,000 units.

„ 11/-	„	„	„	„	„	1,300	„
„ 12/-	„	„	„	„	„	1,700	„
„ 13/-	„	„	„	„	„	2,200	„

It should be noticed that, with respect to the 2,200 units offered at 13/- a unit, 1,700 of these units would appear at a price of 12/- a unit, and that the rise in price of 1/- a unit has brought into the supply 500 additional units which, conversely, would disappear if the price fell to 12/-. These 500 units are the marginal increment of the supply with respect to the price 13/-, and the marginal decrement of the supply with respect to the price 12/-, as a price rise (from 12/-) or fall (from 13/-) of 1/- per unit will bring them into, or drive them out of, the supply.

Some commodities are definitely fixed in the matter of supply. They have no supply price at all in the sense of entrepreneur's expenses of production.¹ In this category fall old masters, rare books, and other articles not reproducible. Land was formerly included by most economists, but it has been shown in several connexions that this is not true of land in an economic sense, except in temporary and local circumstances.

At first glance, building sites may seem in a class distinct from agricultural land, and in some cases their supply with respect to a physical point or particular purpose is fixed by natural circumstances and cannot be increased or decreased by human agency. On the other hand, many building sites are constantly being increased by building

¹ That they have a supply price in another sense will be shown later.

upwards and by improvements in transport making available new sites previously useless for building.

In any case there are goods whose supply, being fixed, cannot be affected by changes in demand prices like freely producible goods.

It is possible, however, to exaggerate the differences between these two classes of goods from the standpoint of economic significance. If the supply of certain goods is fixed in a natural sense, independently of expenses of production, the amount actually offered for sale will be fixed by market prices. In the case of several rare postage stamps, more would be offered for sale as the market price increased until the stock was exhausted. In the case of a single stamp, it would only come on to the market at a certain price. With respect to economic significance the difference between the supply prices of goods that can be increased in amount and those whose supply is fixed is one of degree rather than of kind.

Where a commodity is being produced under constant returns, below a certain price no supply at all would be forthcoming. At a higher price a large supply would appear if demand warranted it; and this state of things may continue over a long period if the forces always tending to cause diminishing returns can be easily counteracted. Industries that do not depend on highly specialised resources which do not easily expand, and whose products are a small item in normal expenditure and are in universal demand, may vary little with respect to conditions of supply over long periods. Differences of degree must be carefully separated from differences of kind.

This applies to differences between normal and market supply prices. Market supply prices, *i.e.* short-period supply prices, are often disturbed by temporary circumstances. In the early days of the Coventry cycle and motor trade the market supply price was much higher than the

normal or long-period price has proved to be. The reasons for this are two. In the first place, in the early days of the industry entrepreneurs had to pay an abnormally high price for certain temporarily scarce resources; and secondly, as the scale of production increased, advantage could be taken of economies of organisation and technical progress. In the building trade during the immediate post-war years the short-period price rose enormously. The entrepreneur had to pay scarcity prices for every type of resource used, but for reasons that have already been made clear the high supply price of these factors gradually led to an increase in their quantity, and in consequence the tension of their relative scarcity was eased. For that reason the price of buildings has been gradually falling.

If, for some reason or other, any particular entrepreneur or class of entrepreneurs is able to obtain command of resources at a price below their normal price, the supply price of his, or their, products will fall for a time below their normal supply price.

Before leaving this topic it is necessary to clear up one possible misapprehension with respect to the term normal. The normal is not the average price: it is simply the long-period price smoothed from fluctuations due to circumstances that are local and temporary. It is a relative, not an absolute, point: what is normal to one set of conditions is not normal to another. The normal supply price of houses to-day is not the normal supply price of pre-war houses, even when due allowance is made for changes in the value of money. The reason is that in this case certain dominant costs, labour expenses for example, have been stabilised on a higher level. In some industries, on the other hand, changes in the opposite direction have made the normal price of to-day lower than it was in pre-war years, and very much lower than it was in the early stages of the Industrial Revolution.

14. Elasticity of Supply

Elasticity of supply is a concept as important as that of elasticity of demand. It measures the changes in the amount of the supply offered due to slight changes in selling prices so far as such changes affect profits. If supply is highly elastic, a slight fall in selling prices and profits in any industry will quickly drive means of production from that industry into more profitable fields.

Supply in any line of production will tend to be highly elastic if the means of production employed are non-specific, that is to say, non-specialised, and have lucrative alternative employments. On the other hand, supply will be non-elastic if the means of production used are specific or highly specialised factors, for clearly, the more specialised an agent of production is, the greater is the difficulty in adapting it to other uses.

A general classification of means of production into specific and non-specific goods is impossible, for the character of any good changes with circumstances. Unskilled labour is certainly less specific than the highly skilled forms, and labour as a whole is less specific than specialised machinery, but it is easy to cite cases where skilled labour and specialised machinery have been put to alternative uses. Land may be, or may not be, a specific factor according to circumstances. The essential point, however, is that with some means of production the supply can be reduced much more easily than with others.

The elasticity of supply is also affected by certain charges, more or less fixed, known as supplementary costs. In many cases, especially where these charges form a high proportion of total costs, it is a lesser evil to continue to produce for a time at a loss than to cease production. If a firm is under contract to pay a high rent, and has to meet heavy interest charges on borrowed capital, and if its staff organisation is of such a nature that it cannot be readily reduced if required, a fall in selling prices and

profits will not cause it to limit output. It will continue to produce its normal output in the hope of circumstances taking a turn for the better in the near future. High supplementary costs, then, tend to make supply relatively inelastic over a certain period.

15. Costing—Prime and Supplementary Costs

As modern large-scale business becomes keener and more efficient, supply price tends to be still more accurately determined by expenses of production. A good example is seen in the "costings system" employed in munition works during the war. Employers are apt to estimate their profits by means of a general average of the different profits on each separate branch of production. An entrepreneur fixes the price of the finished articles so that the total expenses are exceeded by the requisite profit; the distribution of profit between the different "lines" is often fixed merely by convenience. In many cases some goods will be fixed at a higher price and some at a lower than would occur if there were free competition between the different processes of manufacture. This is partly deliberate, as a manufacturer may sell widely known and standardised articles at little more than bare expenses, expecting to recoup himself on luxuries for which the demand is more capricious; it is more often due to imperfect adjustment of prices.

Assuming that free competition leads to efficiency, it is plain that production might be made more economical and in some cases costs might be reduced. After an extensive experience, a man may become so skilful in diagnosing the weaknesses of any particular business that, by acting as a business adviser, he may greatly increase the efficiency of business firms who call in his aid. His method is to examine each separate portion of the productive process to discover if each part is separately justifying its existence; this he can do by comparing each section with the

corresponding section in some other business which has been the most successful in mastering this particular process. This eclectic method of combining the best qualities of many different firms is capable of great developments, and the general tendency will be to reduce the expenses of production to a minimum.

Costs of production may be usefully divided into Prime and Supplementary Costs. If a single order is being executed, there are expenses which must be incurred for this special purpose; necessary expenses which would not otherwise be incurred are called Prime Costs. Again, there are the other business expenses not affected by this particular order, but which are incurred in the expectation of this and a large number of similar orders: these are called Supplementary Costs. There is no hard and fast line between the two, although the distinction is useful: outlay which is supplementary with regard to a single order may be prime with respect to a group of orders.

Before the war it was easy to put a single excursion train on a line without disorganising the staff, and such a train could be run at fares which covered bare expenses of running it; it was quite impossible to run all trains at this fare, for it did not allow of the payment of supplementary costs, *e.g.* the wages of porters. In manufacture, wages, especially piece-wages, represent prime cost; in slack times a manufacturer will probably produce a commodity at little above the cost of labour, raw materials, and allowance for depreciation of machinery. Fixed capital is an example of supplementary costs; salaries to managers and other employees whose pay may in times of depression be regarded as a retaining fee are examples of supplementary costs; when a manufacturer takes a long view, selling price must include these as well as prime costs. The costings system is really an attempt to load each product at each stage with its proper share of supplementary

costs, though, as we have noted, familiar goods might be sold at prime cost in order to advertise other goods.¹

16. Joint Supply

In one sense, all products are supplied by the joint co-operation of various factors, but in practice, certain products spring from a common source in such a way that the production of one involves the production of another. Familiar examples are, leather and beef, mutton and wool, linseed and flax, cotton and cotton seed. Products of this kind are termed joint products.

The special interest of joint products lies in the fact that it is exceedingly difficult for the entrepreneur to decide what proportion of the total expenses is accounted for by each product.

In some cases it is possible to vary the proportions between the products produced jointly from a common source to an appreciable extent. Sheep, for example, yield mutton and wool, but the proportions vary from breed to breed. Farmers can, therefore, as Bakewell discovered in the eighteenth century, by judicious crossing of the breeds, rear sheep that will yield relatively more mutton than wool, or more wool than mutton, as occasion requires.

The importance of this fact is that it is possible to use it as a means by which the marginal utility² of either product may be measured.

Suppose a farmer finds that a certain number of sheep of a certain breed will yield a given quantity of mutton, and that a larger number of sheep of a breed that yields more wool and less mutton is required to produce the former quantity of mutton. Now against the extra expense

¹ It is easy to exaggerate the significance of the above distinction, except in the short period. As Marshall points out (*Principles*, p. 360) many supplementary costs differ only in degree from prime costs, and the distinction is often difficult to maintain. Indeed, in the very long period, nearly all costs are prime.

² Or significance.

of rearing the additional number of sheep there will be a surplus of wool. The extra cost of grazing is the marginal cost of the wool. In a similar way the marginal cost of mutton may be ascertained.¹

From the entrepreneur's point of view the relation between these marginal costs and the demand prices of the respective products will determine the amount of his supply of each.

Cases of this kind are in the minority, and while in the case of animal breeding, and many vegetable products, some variation is possible, it can only be made within clearly defined limits, so that it is easy to exaggerate the general significance of it. Where variation is possible, however, it follows that an increase in the supply of one product will not necessarily increase the supply and lower the price of the other, certainly not proportionately, once the period of adjustment is completed. In the case of wool and mutton, if, in response to an increase of demand, the supply of wool were increased, cross-breeding would be used to limit the supply of mutton if the demand for that product remained constant.

In many instances of joint supply it is impossible to alter the supplies of one of the joint products, and it is therefore impossible to assign separate marginal costs to any specific product, for the very good reason that they cannot be measured. This fact is of interest because, if it is impossible to assign a definite cost of production to a product, it is clear that its value must be determined by forces operating from another direction. If any further proof were required that costs of production, however defined, are not the ultimate determinant of value, we have it in the case of joint supply.

Where the proportion between the products cannot be varied the price of each product will tend to be the price

¹ See Henderson: *Supply and Demand*, for a very useful numerical example.

which represents the marginal significance of the quantity of the product that is offered on the market, and the amount of each product offered will be such, under free competition, that the sum of the money values of the group of products will equal their joint cost of production.

17. By-Products

In the case of joint supply where one or more products are produced incidentally in the manufacture of a main product, such products are termed by-products. When coal is distilled for the manufacture of gas a by-product, coal tar, is produced, and from coal tar a series of by-products, drugs, perfumes, dyes, are derived. Usually, these by-products are given off in fixed proportions, and it is evident that a fall in their demand price would not cause less of them to be produced as their production is incidental to the production of something else. The price of by-products thus depends on the marginal significance of their supply, which in turn depends on changes in the demand for the product from which they are derived.

18. Composite Supply

Finally, another phenomenon necessary to take into account is that of composite supply. This exists when there are two or more products which satisfy the same need. Typical examples are tea and coffee, butter and margarine, petrol and benzene. These products are not perfectly interchangeable, and in most cases of composite supply one source is inferior to the other. Still, each item in the same series can be, and is, especially in times of scarcity, substituted for the other. Therefore, if one element in a composite supply is increased, the tendency is for the demand for the other to decrease, and, in consequence, its supply. A case of special importance is that of labour and machinery, for up to a certain point these two elements are mutually substitutive.

In the early days of the Industrial Revolution, machinery was introduced only relatively slowly in industries in which a supply of cheap labour was available; and in more recent days, in industries in which labour was highly paid, the tendency has been to substitute machinery for labour, and as this element in the composite supply has increased, the demand for labour in some trades has decreased.

These four definitions are of great importance because their recognition is necessary in the case of nearly every commodity: goods which are not obtained from two or more sources and do not form a basis of two or more productive processes are very rare. The causes of the dearness of leather in a manufacturing country, the cheapness of firewood near a carpenter's shop, or of certain inferior portions of a carcase in a butcher's shop may be left as exercises to the student.

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CHAPTER IX

COMPETITIVE MARKETS

1. Introduction

Several threads that have run to some extent disconnectedly through previous chapters must now be brought together, and into relation with the phenomena of the market, which Wicksteed describes as the heart of the subject. It is, however, only an extension of the principles laid down in the exposition of margins put in a technical and industrial setting.

In the last chapter the main principles of supply of commodities were examined in isolation, as far as was possible; the ground is now clear for the discussion to pass from the subject of means to that of their relationship to ends, in an economic order of society in which these means are relatively scarce compared with ends. With the nature of these ends, as has already been laid down, Economics has no concern.

This leads us to a consideration of markets, and of the forces by which the mechanism of price is determined in the market. Throughout this chapter it will be assumed that the forces of competition work without restriction; imperfect and monopoly markets will be considered later.

2. The Conditions for Exchange

The relative scarcity of resources at any given moment is the first condition for exchange. Each individual has a scale of preferences with respect to his wants or ends in relation to the resources he has at his disposal, either in the shape of concrete goods or through the intermediary of money.

Price is the ratio between two quantities of things that are exchanged, and whatever causes men to exchange causes them to establish a price or ratio of things exchanged. It should be noted that an act of exchange is really a double act of substitution. When *A* exchanges a pair of boots for 15/- with *B*, *A* gives up the boots and substitutes the money; *B* gives up the money and substitutes the boots.

Now exchange becomes possible only when a particular good occupies different relative positions on the scales of any two people. The person on whose scale it stands higher will, if he does not already possess it, be anxious to exchange for it something that is lower on his scale, but which stands relatively higher than the good in question on the scale of its possessor. It should be noticed, too, that if Brown exchanges a pair of boots against a hat of Robinson's, it does not follow that Brown has more pairs of boots or that he values a pair less than Robinson, but it does prove that, relative to other things that he possesses, a hat stands higher on Brown's scale than a pair of boots; and the converse applies to Robinson.

This, of course, is only a precise way of stating a common-sense fact of experience, and it should be noticed that it is only a particular aspect of what as early as Mill was recognised as the basis of international trade, the theory of comparative costs. But all costs are comparative, or alternative; hence there is no fundamental difference between the economic principles of home and foreign trade.

The following illustration of a different type from the one above should make the point perfectly clear.

If a man can make *A* extremely well and *B* better than the average, he will be likely to exchange his surplus of *A* for his requirements of *B*, even though he must pay more for *B* than it would cost to make it himself. On this apparent paradox, world exchange largely depends. Again, even though two men may each be able to make *A* cheaper

than *B*, exchange may be possible between them. One man can make suits 10 per cent. more cheaply than boots, and a second man 5 per cent. more cheaply. Then, even if the first man can make boots ten times as cheaply as the other, it may pay him to concentrate on suit production and buy boots at the higher price. Generally speaking, if the ratio of the expenses of production of two articles are different for two producers, exchange may occur.

The principles of exchange between two persons (isolated exchange), are similar to those on which Robinson Crusoe apportioned his time between picking berries and gathering nuts. (It should be noted that these goods are infinitely divisible, and also that when Robinson decides to pick berries rather than to gather nuts he is substituting berries for nuts.) Clearly, he will acquire such quantities of each that, at the margin, no further substitution can be made to advantage.

The only difference between an act of exchange between *A* and *B*, and Crusoe gathering nuts and berries, is that Crusoe knows exactly what substitution he can make. When *A* exchanges with *B* he has no such exact knowledge. A certain amount of bargaining will thus take place, and that means that more than one equilibrium price will be possible, because equilibrium will be established on the basis of possible offers and demands, and not by given prices. In every case of exchange, however, whether between two or a number of persons, equilibrium will be reached at the point at which marginal substitution gives neither advantage nor disadvantage, that is to say, in a state of equilibrium, to both parties to every act of exchange, marginal prices will be proportional to the marginal utilities of commodities. This does not mean that the marginal utilities to different persons are equal or that the ratio of marginal utilities is equal to the ratio of average prices at which goods are exchanged; it only means that the ratios of the marginal utilities are equal to each party to the exchange.

It was said above that price is the ratio between two quantities of things that are exchanged. Price, however, does more than equate supply and demand. As will be shown later, it decides the amounts of commodities that sellers will retain for their own use, as well as the quantities they will offer for exchange.

But to return to the fundamental point, the fact that exchanges can only be effected with advantage when a good occupies different relative positions on the scales of preference of different individuals suggests the following question. Is a state of perfect equilibrium possible, in which individuals would have no economic inducement to exchange their limited resources?

Theoretically, we can answer yes. From the first example given above, it should be evident that in the case of any single commodity, the good would have to occupy the same relative position on the preference scales of all those who possess a part of it, and, in addition, this position must be higher than the position the good occupies on the scale of anyone who does not possess it; and what applies to any one specific commodity applies equally well to all the others.

In reality, however, when we remember the infinite complexity of both human characters and circumstances, and the fact that new wants are continually appearing which modify the previous positions on relative scales, equilibrium is never likely to be attained in practice; but all economic movement is a tendency in that direction, and here lies the significance of the operations of the market.

3. The Local Market and Pricing

As Wicksteed so excellently shows,¹ the whole mechanism of exchange is perfectly illustrated by the everyday operations of the housewife in the local market for consumer's goods.

¹ *Common Sense of Political Economy*, Vol. I., Ch. VI.

The reason for this is that competition, if not absolutely perfect, at least approximates to perfection. The sellers are relatively numerous and independent, and they are in personal contact with the buyers. Every buyer is in contact with the whole of the sellers, and every seller is in contact with the whole of the buyers. All the transactions take place on practically the same ground, and publicly, so that what takes place at one corner of the market is immediately and everywhere diffused. The local market operates independently of other markets, and although there is some connexion between the prices of yesterday, to-day, and to-morrow, yet to a very large extent we can regard each daily market as a separate entity, so that the question of future supplies need not be taken into consideration.

How is price fixed in such a market? Now at first glance they appear to be fixed, as the older economists thought, by the decisions of the sellers with reference to their costs of production, and it is an undisputed fact that when any individual prospective buyer arrives at the market, the prices are already fixed.

Wicksteed cites the case, in opposition to the older view, of rural markets, at the opening of which sellers have been known to declare that they cannot name the market price of a specific commodity. This case is doubtless much less common than formerly, and in retail markets, apart from auction sales, the "higgling" of the textbooks is not usual to-day. People do not as a rule enter a shop or a store and bargain literally.

Nevertheless, it is not the sellers who fix prices: in spite of appearances, the influence of the buyers is dominant, though in a disguised form. This influence is disguised because, where competition is free, the demand of each buyer is a very small fraction of the total demand. It is of course, the buyers in mass that determine prices.

Ladies with limited resources do not usually enter a shop, when contemplating the purchase of a new dress, select a dress, and pay the price marked. There is a very important intermediary stage which consists of a preliminary journey round the shops with a view to a comparison of the relative prices of the goods displayed for sale in different shop windows.¹

Now suppose that the marginal position of an extra hat on a lady's scale of preference, corresponds with the monetary measure of £1, the purpose of the "shop-window gaze" is to expend that £1 to the maximum advantage. But the sellers are aware, consciously or subconsciously, of the psychological processes going on in the mind of the prospective buyer, and if her individual scale corresponds with those of a large number of others, as will normally be the case with individuals of the same social class, in respect to articles of general consumption, every shopkeeper knows that, if on entering his shop, she rejects the hat after examination on account of the price, her opinion is likely to find echo among other buyers.

If he is convinced of this, the seller either reduces the price (cases of this kind are not uncommon) or he attempts to substitute a similar article which he can supply at the buyer's price. If he makes no reduction in price it is because he is firmly convinced that if this prospective buyer will not purchase, someone else will. It is not essential to the argument for the prospective buyer to actually enter the shop. The mere fact that prospective buyers do not pass the stage of examining the goods in the window is sufficient proof to the seller that he is placing a value on his goods that is higher than their marginal positions on the scales of relative preference of the persons beyond his windows. As Wicksteed says, the price of anything is not fixed ultimately by the

¹ This was formerly called shop-window gazing in the North of England.

sellers at all, but partly by the purchaser himself, and to a much greater degree, by the opinions of other buyers.¹

Anyone inclined to doubt this elementary truth has only to reflect over his own experience in disposing of anything privately, from a house to a second-hand cycle, to be convinced.

No doubt as a starting point for negotiations, the seller does fix a price, and one that bears some relation to the cost to him, after making the necessary allowance for depreciation; but that is a preliminary procedure only, unless this price happens to coincide with the marginal valuation of some prospective buyer with whom he is in contact. If this price is higher than that marginal valuation, it will only be retained if he is convinced that what this person will not give, someone else will. On the last analysis, it is the collective opinion of the buyers that determine prices, as in the example above. At any point in time, the supply is given, and what a commodity costs to produce, whether labour efforts or monetary expenses, exerts no influence on the buyers. In the long run, it is true that, unless the marginal expenses of production are covered by the selling price, supply will diminish, and with the greater scarcity the marginal significance of every unit of the commodity will rise and the buyers will raise their offers. This fact, however, is not determined by the costs of production, but springs solely from the increased scarcity of the product, independently of the cause of the scarcity. If the scarcity occurred from a sudden expansion of demand in relation to a constant supply, the result would be the same.

4. Sellers' Reserve Prices

But it does not follow from what has been said above, that the buyers can force the sellers to accept any price they choose, and for one very good reason. Like the buyers,

¹ *Common Sense of Political Economy.*

the sellers have their reserve prices below which they are not disposed to move.

A, for example, owns the house in which he lives, and he is forced by circumstances to move elsewhere. Because his resources are strictly limited, it is necessary to sell the house in order to purchase another in the new locality. He is therefore disposed to accept a low buyer's valuation, but not beyond a certain point, because the house has an alternative use for him. He can let it, and so obtain an income from his capital in that way, and when the necessary allowances for the drawbacks and inconveniences of this plan have been made, the capitalised value of the net income remaining gives a value below which he is not likely to move far.

B is anxious to sell his car and purchase the latest model. He is prepared to accept a low figure, but at a certain point any advantage in selling is counterbalanced by the fact that the car, though not what he desires, and though inadequate to his needs in many respects, still has a use for him, and in ordinary circumstances he is not likely to sell below the capitalised value of this use.

To turn back to the market: in the case of many commodities in general use, when the demand price falls to a certain point, the stall-holder begins to consider the question of retaining a part of the stock for his own consumption; and the argument has a wide application. Even in the industrial world the number of such cases is not small. Machinery can be taken to pieces and parts used for other purposes. Goods can be deliberately withdrawn from the market for a period. Where an article has no alternative uses, its price on the short-period market can fall very low.

These perfectly general facts enter into the psychology of the sellers; they enter the market with reserve prices dictated by the value of the commodity in some alternative use. At a certain point they become for all practical

purposes buyers, at least so far as their economic effect on the market is concerned. The importance of this fact for economic theory is immense, because it makes clear that no fundamental difference between buyers and sellers exists. It was for long supposed that the psychological forces on the supply side were different in kind from those of demand; in other words, utility was opposed to real costs in the shape of painful labour efforts. The reader should now be convinced that such a distinction is untenable. Such differences as do exist are differences of degree only, not differences of kind.

The argument can easily be extended from the commodity to the stock market. What buyers are likely to give for stock yielding a certain income is governed by other urgent competing demands for their limited resources; and from the sellers' side of the possible transaction, their reserve prices are determined by the possible openings for their capital liberated.

It must be remembered, of course, that we have under discussion a particular type of market, in which the supply is fixed. The longer the period the more complex become the conditions of supply, but so far as the present point is concerned the transition is easily made. If the demand price for a given line of production falls below the reserve price of the producers, they will remove some of their resources into other lines, that is to say, the part of their means of production that is not too highly specialised. Where and to what extent resources will be moved depends upon the demand prices in other lines of production. A producer in any one line, therefore, will have a reserve price for his products determined by what his means of production can earn in other lines. In the case of highly specialised resources they will not be replaced as they wear out. So far as these means of production are concerned the producer's reserve price will be conditioned by the advisability of replacement.

5. The Price of a Commodity on the Same Market, at the Same Time, under Free Competition is Uniform

The marginal significance of any commodity depends on the quantity possessed, for on that depends the uses to which the good will be put. In the case of the buyer entering the market, the amount of any commodity that will be purchased depends on the relation between the buyer's purchasing power and the reasons for desiring the commodity. At a certain price, one unit only may be bought; at a somewhat lower price, perhaps two or three units; and so on up to the point at which the marginal satisfaction derived from an additional unit would be less than if the money were expended on a unit of some other commodity.

There is, therefore, a price that would be just sufficient to take the entire stock off the market. That price is the demand price of the most indifferent buyer. A slight qualification is needed here, for if that demand price were lower than the reserve price of the keenest seller, part of the stock would be retained. The greater scarcity of the supply would raise the price by making the least anxious buyer increase his offer, or by making the marginal buyer one a little higher up the scale. In any case there is a price that will just clear the supply offered.

Now if buyers enter the market with varying intensities of demand for different increments of the supply, the question at once arises, Why do not sellers dispose of different units at different prices? *A* desires a commodity for a very urgent purpose, and is prepared to pay a high price for it. *B*, at the other extreme is more or less indifferent and is willing to consider a purchase only at a low price. Why, then, should *A* get his supplies on the same terms as *B*?

For this fact there are several reasons. In the first place, buyers do not enter the market in a sequence corresponding to the intensities of their demands; neither are they labelled;

hence to attempt to exact the maximum price from any specific customer, unless he happened to be first in the demand sequence, would drive him elsewhere. Competition, whether actual or potential, between the sellers, would prevent the supply being sold in a descending order of prices from the maximum to the minimum.

More important still, the very notion of a market is bound up with publicity. The terms of each transaction cannot be isolated and kept secret. Even the customer who would be prepared to pay a high price for a portion of any commodity will not do so if he can get it for less. He does not usually act with precipitancy but rather waits until he has judged the tone of the market, and this is made by those least anxious to buy. Even if it were known that a particular customer would pay a high price it is difficult to exact it in practice, because he could always purchase through the intermediary of someone else, a procedure common at auction sales.

So far we have considered the problem from the side of individual sellers attempting to make customers pay prices corresponding to the degree of their intensity of demand.

Suppose that each seller offers, say, butter at the same price to all his customers, but that *A* asks 1/- per lb., *B*, 1/1 per lb., *C*, 1/2 per lb., and *D*, 1/3 per lb., and that the butter is of the same quality. What would happen?

Clearly, as soon as the differential prices were known, all the customers would flock to *A*; and *B*, *C*, and *D* would be left with empty shops or stalls without customers. Now if *A* could supply the whole of the demand, it is clear that *B*, *C*, and *D* would have to lower their prices to do any business at all.

But if *A* is conscious that he cannot supply all the demand, then as his stock begins to run low, he would raise his price, perhaps to 1/0½, and if demand were unchecked, then to 1/1; but this would bring *B*'s supply on the market, and if *C* and *D* considered it likely that *A* and *B* could

supply the demand, they would reduce their prices to $1/1$, the price that would rule the market. But if *A* and *B* could not exhaust the demand the pressure of the buyers would force up the price to $1/2$; and so on.

The final price will depend upon which combination of sellers can supply the demand, and the price will tend to approach the upper limit as the point of equalisation. It does not follow that it will reach this limit, because those sellers anxious to sell at higher prices will be faced with the danger of not being able to dispose of their stock. At a certain stage, therefore, they will enter into competition, and their action will prevent the price from rising as high as it would otherwise have done. In either case, however, the price would be equalised.

From the form of this argument it may appear on a superficial glance that it conflicts with the theorem that the sellers do not ultimately fix prices. But a moment's reflection will suffice to convince that the inconsistency does not reach below the surface. What really and ultimately fixed the price was the scarcity of the supply relative to the demand. The sellers were merely the medium through which this force was expressed.

It must be emphasised that the principle of one price is valid only for the same class of article. Qualities shade off by degrees, one into the other, and slight differences are not always readily detected by the casual observer. This accounts for many apparent exceptions to the rule. Again, uniformity of price is much more readily established in the wholesale than in the retail trade, and where the market is held in a definite place, for reasons that need no explanation.

In retail shops, prices of similar articles do vary from district to district of the same town, largely because the force of custom acts as a check on competition. Again, prices vary from district to district because the class of customers varies. Higher prices are charged in some

suburban retail shops, not because their customers have a more urgent demand, but because they possess greater monetary resources. For this reason these resources have a lower marginal significance: means relative to ends are less scarce; hence competing wants exert less pressure.

Even in a local market, price is not established with that mathematical precision suggested by the previous pages. Competition is never perfect and errors of judgment on the part of the sellers do occur; but the persons who meet on the market are trained buyers and sellers, and in the world of competitive business heavy penalties are attached to errors of judgment. Even in purely domestic circles the housewife who buys carelessly is soon in difficulties, and this fact acts as a constant brake on her mode of expenditure.

Before leaving the short-period market it will be perhaps advisable to examine price formation a little more specifically. Consider the following supply and demand schedules for plums. The schedules are made symmetrical, but in practice this need not be the case. An infinite amount of variation is possible.

DEMAND IN LB.	PRICE IN PENCE	SUPPLY IN LB.
20	9	50
25	8	45
30	7	40
35	6	35
40	5	30
45	4	25
50	3	20

Now it is a self-evident proposition that in every supply and demand series there must be some point at which the supply offered and the amount demanded are equal, as both forces move in opposite directions. In the above

example supply and demand are equated when the price is 6d., for at that price 35 lb. are demanded by the buyers and 35 lb. are offered by the sellers.

It is also self-evident that at any price above 6d. there must be a surplus supply, and that at any price below 6d. there must be an excess of demand. Suppose, for instance, that the price was fixed at 7d.: some sellers would have 10 lb. of the supply left on their hands. Competition between the sellers would therefore drive down the price to 6d., at which price the whole supply would be taken off the market.

In a similar manner, if the price fell below 6d. to 5d., competition between the buyers for the insufficient supply would force up the price to 6d. If the price rises to any intermediate point between 6d. and 7d. the marginal buyers would be excluded, and it must not rise to 7d., or other sellers would be admitted. For similar reasons, if the price fell a shade below 6d. the marginal sellers would be excluded, and at 5d. additional demand would be admitted.

If we consider only the immediate phenomena of any specific case, it is possible to distinguish four limiting positions for market prices, that is to say, four positions which fix the limits to possible variations. The marginal demand price and the first extra-marginal supply price fix the upper limits to the range of movement, and the lower end of the range is governed by the marginal supply price and the first extra-marginal demand price.

This distinction is in no way inconsistent with what has already been said on the subject, as may appear at first glance. When it is asserted that in the short market there is no fundamental difference between the forces behind the curves of supply and demand, or, as Wicksteed says, that the supply curve is only a part of the demand curve reversed for convenience, it must be remembered that we are speaking of ultimate facts, not of surface

phenomena. For many practical purposes it is necessary to treat these curves as distinct.

Now with respect to the range of movement, it should be noted that this is largely a question of the size of the unit of the commodity and the size of the unit of price. Where these units are highly divisible and competition is perfect the four limiting positions tend to coincide. The case of highly divisible goods presents little difficulty and, as has been shown in an earlier chapter, the difference between divisible and indivisible goods can be eliminated.

It should also be noticed that although the marginal demand, relative to the supply, is the decisive factor in price making, the whole of the effective demand has an indirect share. In the above schedule, at the price of 6d. per lb., the marginal demand price contributed only 5 lb. of the 35 lb. demanded at that price. It is clear, therefore, that if earlier increments of demand had had no influence on price, the equilibrium price would have been much less than 6d. This, of course, illustrates the truth that the margin has significance only in relation to the whole.

But, as Wieser points out, ineffective or excluded demand has also a share in price determination. As was shown above, the highest offer from the side of ineffective demand, or in technical language, the first extra-marginal demand, is a limiting position, and must therefore always exercise a strong influence.

6. Markets in General

Having used the local market for the purpose of expounding certain general principles which apply in some form or other to all classes of markets, we can now pass to a wider survey from a purely industrial point of view.

The term market as used in Economics contains two distinct ideas. Firstly, a market is a place in which goods are sold, and secondly, it implies the presence of sellers and buyers who wish to trade.

Economics follows common usage in connecting a market with a particular commodity: just as a market is a collection of keen traders and buyers so concentrated that no trader who wishes to sell his stock can offer his goods much dearer than his competitors and no keen trader will sell them much cheaper, so an economic market implies the presence of competition which keeps the price of identical goods constant throughout its range. Such a market is a region within which prices speedily come to a practical equality, though there will often be a constant slight difference in price limited by transport costs; it also implies a body of traders dealing in that region in the commodity concerned; a market may thus be a single producer and a single consumer, or it may embrace the whole world.

Gold may be transported across the globe at a cost infinitesimal compared with its value, even when insurance is considered, so that the value of gold (measured by any definite standard) is almost constant throughout the world. Coal, however, is bulky, *i.e.* a comparatively small amount measured in money takes up a great space; as the cost of transport depends largely on weight and bulk, there is a great difference in the prices of coal in places remote from a coalfield, as evidenced by the present very high price, say, in Italy. Assuming (what is not always the case) that transport expenses depend only on weight, that in a given case the price of tin is £200 per ton and that of coal is £2 per ton, and that a given transport charge is £2 per ton, then the price of the coal is increased by 100 per cent. and that of the tin by 1 per cent. only.

Thus, even in a small country the price of coal fluctuates rapidly from place to place; the percentage change in price within a few miles may be more than the difference in England and America for more valuable commodities. Hence a coal market, though often large in respect to population, is limited as regards area, even though coal may be exported far outside the limits of the economic

market. Incidentally this provides an explanation of the fact that industries tend to grow near the coal supply rather than near the less bulky raw materials.

7. World Markets

Portability is thus a condition that the market for a commodity shall be widespread. Another condition is cognisability, *i.e.* that the quantity and quality of the commodity shall be easily estimated. Wheat varies in quality between wide limits, but the various grades are easily recognised. Thus wheat is easily "graded" into standard classes. A graded commodity may usually be sold without difficulty, especially if in wide and constant demand, for no dealer will hesitate to buy it at the standard rate; grading may be so perfect that a European buyer may put absolute trust in a verbal description of goods he has never seen. Such commodities meet with little resistance to movement, and the difference in price from place to place tends to be no more than transport charge.

A steady world-wide demand for a perfectly gradable commodity of which buyers have an effective knowledge may be combined with a portability which, if there is no artificial impediment to sale, may develop a world market. Such a market virtually exists for gilt-edged securities, *i.e.* certain stocks and Government securities which are universally known and trusted. Little less perfect is the market for precious metals and precious stones and (if transport cost is considered) for wheat, while the development of cold storage has similarly widened the market for beef and mutton.

At the opposite extreme stand the bulky and non-gradable commodities. The market for Aberdeen granite is limited; away from that town the stone is an expensive luxury. Again, there is a limited market for good clothes, for each suit is made for a definite customer, and grading is thus impossible; however, the introduction of standard

suits widened the market for suits by destroying many tiny markets, introducing graded goods. Deterioration is another factor: as a commodity cannot be properly graded if its quality is not constant, there is a tendency to limit the market; in the extreme case of perishable goods the market becomes very small.

The artificial limitations of markets are many and important, and partly constitute what has been called economic friction: such limitations may spring from ignorance or habit, and also from deliberate attempts to restrict trade for selfish reasons, *e.g.* the case of some monopolies, as well as of heavy duties on imports. During the war the world market for many commodities split up into a number of watertight national or allied markets, and the effects still persist (*e.g.* with regard to Russia), though we now perceive the gradual widening of markets towards their former condition.

There is a continuous chain between local and world markets, while for some purposes a region may be considered a true market even when price varies within it, if the difference is due solely to transport and is insufficient to check extensive trade. Perhaps a better test than price is the existence of keen competition: if this exists, *i.e.* if the buyer in the less favourably situated country can compete effectively with his rivals, they may be said to trade in the same market in the commodity in question. The term market is one of convenience and its meaning may be elastic.

8. The Time Element. Futures

More complicated conditions must now be considered, and may be best studied with respect to commodities of intermittent supply, *e.g.* wheat. The time element becomes important here: the price of wheat is in practice defined neither by the actual quantities available (in relation to the demand) nor by a steady flow of the

commodity, but by the interaction on the one hand of the expected intensity of demand in the year in question, and on the other of the total amount expected to be available after the next harvest. If a dealer holds stocks of wheat (it being remembered that this, within limits, is a non-perishable commodity), and believes that the next harvest will fail, he will be loath to sell at the current price and will hold up the wheat for an expected rise. Similarly, if he contracts to buy wheat while the harvest is still uncertain, he will carefully consider the prospects of wheat production in all parts of the world and also the probable extent and intensity of the world's desire for wheat. Thus, in spring, he may offer a definite price for a portion of the next harvest, relying on his judgment as to the future state of the world wheat market: this is called dealing in "futures."

Futures are a prominent feature in modern trading, especially where the supply is not constant, but seasonal or otherwise intermittent. Their importance lies in the fact that they bring corrective forces into play much earlier than would be the case if events were left to follow their natural course. If the dealers anticipate a shortage of wheat and a sharp rise in prices next year, they will try to buy at present prices for future delivery next year. This increased demand on the wheat market will tend to cause a rise in prices at once and that in turn will give the signal to the wheat growers to extend their acreage and increase the supply of wheat for the coming year. The result is that the shortage of wheat and the rise in prices is arrested.

Conversely, if a glut of wheat and a sharp fall in prices is expected in the near future, dealers will attempt to sell wheat at present prices for future delivery. The result will be that prices will begin to fall at once and to give the signal to the wheat growers to restrict their acreage for next year. In these ways sharp fluctuations in prices are

smoothed out, and we can say that speculation tends to stabilise prices.

The term speculation can be used in a non-economic as well as in an economic sense, but the essential difference is one of motive rather than of economic effects. A very large part of business enterprise is speculative at some point or other, and future dealings on the produce exchanges play a part similar to that of insurance in other fields. No industry can prosper unless it is assured of an adequate supply of raw materials at approximately stable prices in the moderately short period; hence in industries which depend on raw materials the supply of which is liable to wide fluctuations on account of climatic and other causes, speculative dealings in raw materials are an absolute necessity.

And it would be incorrect and misleading to think of these dealers as gamblers in the usual sense of the term. Far from being mere "plungers" on the off-chance of a rich reward, they are experts in market conditions and their actions are the result of considered judgment. Gamblers in the colloquial sense of the term could not continue long in business on a modern organised exchange.

A sharp dividing line between legitimate speculation and gambling is difficult to draw in practice; but in a broad sense and from the point of view of the community the economic effects are the same in both cases. A possible exception is the case of a successful corner in some necessity like wheat and other foodstuffs which may inflict great hardship on the poor. But cases of this kind are negligible in comparison with the mass of economic business transacted on the exchanges.

Against the traditional view, Professor Chamberlin has argued that there seems no inherent reason why speculation should stabilise prices. Why? he asks, should the speculators cease buying and selling when the equilibrium price is reached, and neglect the opportunities for profits

in movements away from the equilibrium price. Even if their transactions ultimately cancel out, their activities must cause capricious movements in supply and demand as the majority of the speculators now incline one way, and now the other. Will not every price movement gather force from the efforts of the speculators to benefit from it?

Professor Chamberlin thinks that, so far as prices are stabilised, it is due to more perfect knowledge rather than to the speculators. On his view, speculation tends to raise prices and not to stabilise them.¹

9. The Individual Producer under Perfect Competition

Before passing to the question of long period, or normal prices, it is necessary to explain one or two points in connection with the equating of demand and supply.

If we consider any concrete market over an appreciable length of time, the highest degree of competition possible is pure, rather than perfect competition. Certain assumptions of perfect competition such as perfect mobility of factors of production, perfect knowledge of market conditions, and negligible time elements and transport costs are never realised in practice. We can, however, have so large a number of buyers, and sellers or producers, that the supply and demand of each individual is a negligible fraction of the total supply and demand. We can also have a perfectly standardised product, and in consequence, a uniform market price, for where the product of each producer is identical, and the number of producers and buyers is large, no producer can sell at any price other than the market price.

In these conditions the demand curve for the product of any one producer will be a horizontal straight line at a height above the " x " axis equal to the market price, and this means that he can sell as much as he chooses at the

¹Chamberlin: *Theory of Monopolistic Competition*.

current market price, and, incidentally, that marginal revenue is equal to average revenue or price.

The question now arises, how much will each producer desire to sell? Clearly the answer must be the amount that will maximise his profits; and as the number of producers is large, and as they are competing on level terms with respect to the product, the total amount sold must be such as will maximise the profits for all producers. This amount, and the price will be given by the intersection of the supply and demand curves for the whole group of producers and buyers.

It should be noted that in the conditions assumed, the amount and price that equates supply and demand is also the equilibrium amount and price. If output as a whole were fixed lower, and price higher, than at this point, some producers would be making extra profits; the efforts of other producers to maximise their profits would thus force an expansion of output, and a lowering of price. On the other hand, if output were fixed larger, and price less than at the point of intersection of the curves, some producers would be working at a loss; their efforts to maximise their profits would cause a contraction of supply and a rise in price. In equilibrium, therefore, the supply and price must be such as to equate the group curves of supply and demand.

The distinction between the demand curve for the products of each individual producer, and the demand curve for the products of the whole group of producers in an industry operating in conditions of pure competition must be carefully observed. It is only the demand curve for the products of an individual producer that is a horizontal straight line. When these individual demand curves are combined into a group demand curve, the curve slopes downwards as we move along it from left to right. It is only an increase in an individual supply that has a negligible effect on the total supply and price.

resources would be attracted to this branch of production from other industries; present firms would expand their output or new firms would open out. But this larger output, if demand remained constant, could only be marketed by attracting marginal buyers lower in the scale of intensity of demand, *i.e.* by reducing prices.

If, on the other hand, prices fell for a long period below the marginal expenses of production, supply would gradually decrease, and the marginal buyer would be someone higher up in the scale of demand, *i.e.* prices would rise until marginal expenses of production were covered. In the long run, therefore, the normal price of goods, freely reproducible, must oscillate round their marginal expenses of production, assuming, as we have done in this chapter, the absence of restrictions on competition. From these facts, the short step that normal prices are governed by marginal expenses of production was easily taken.

But because there is a coincidence between normal selling prices, and marginal expenses of production, it does not follow that marginal expenses determine prices. Directly, and ultimately, they decide only the amount of the supply, and not the price. The price itself is determined by the scarcity of the supply relative to the demand. It is the intensity of the demand which governs the degree of the scarcity, which in turn conditions the supply, and finally the marginal expenses; therefore, cutting out the intermediate terms, it is marginal demand to which marginal expenses must conform in the long run.

The argument is not affected in any way if we attempt to get behind the phenomena of monetary expenses; we do not necessarily reach the real costs in the sense of painful labour efforts, of the English economists from Ricardo to Marshall. The price of any kind of resources entering the production of any commodity is neither proportional to, nor conditioned by, the difficulty of their attainment. It solely depends on their relative scarcity and

on the fact that there are pressing demands for other kinds of scarce products, for which these resources would have been used if they had not been devoted to the production of the commodity in question. Whichever way we approach the problem we find that normal, like market prices, are ultimately decided by competing demands. Marginal expenses are a dependent, not an independent, entity.

There is, then, no fundamental difference between the forces that establish market and normal prices. Such differences as do exist, and they are very real, are differences of degree and not of kind. Over a short period, frictions due to local and temporary circumstances constantly occur; in the long run, those due to a particular set of causes tend to disappear.

Over a short period, the supply is given. It is a little difficult to define always with precision the extent of a short-period supply, because in some markets the supply includes not only the stock in hand, but also those increments in the process of production undertaken in the expectation of realising a certain selling price.

Now if we take a broad view of market supply, whatever the price that is fixed in the market, supplies cannot be immediately increased, neither can they be immediately greatly decreased; if allowance is made for withdrawals for motives previously explained, market prices can have but little effect on the supply.

Over a long period, the case is very different. If the marginal demand price settles below the marginal expenses of production, for any length of time, the supply will gradually diminish and a new equilibrium will be established. On the other hand, if price settles at a point at which marginal expenses are much more than covered, production will increase and supplies will expand. This possible raising and lowering of the limits of scarcity through contraction and expansion of supplies constitutes the essence of the difference between market and normal prices.

In the consideration of the supply side in partial isolation¹ it was emphasised that the normal must not be regarded as a fixed point. Exactly the same considerations apply to normal price.

Neither in the short period nor in the long run is the price of any commodity really fixed separately. The prices of any series of commodities which an individual or class of persons habitually uses are a unity in which each particular price bears a definite relation to those of the other members of the series.

This is perfectly clear if we consider Wicksteed's housewife entering the market to renew her household requisites. The price that she is prepared to pay for any commodity depends not only on a particular want, but on her whole series of wants, some of which extend far beyond the household. It should be noted that the truth of this does not depend on any actual "higgling." For some time before the summer holidays, shopkeepers experience a decline in the demand for certain goods, simply because their relative value has changed to their consumers with the prospect of an extra expenditure in the form of a holiday.

This principle is at work throughout the whole range of economic society, though often in a more subtle form. Every price is fixed, in both long and short periods, with reference to the prices of every other good that is used directly or enters into the circle of exchange. It follows, therefore, that the price of every economic good may be modified by circumstances that affect it only indirectly.

Normal price is thus far removed from the simple concept of being fixed by the marginal expenses of production. In reality it is highly complex and subject to modification by causes operating throughout the whole range of demand in relation to the conditions of supply.

¹ See Chapter VIII.

The problem of pricing, however, is by no means a simple one, and economists who in general belong to the same school of thought hold different views on many matters of detail. That the fundamental fact is the amount of the supply relative to the demand is beyond dispute, but a detailed analysis of both terms of this relation is complicated. Even with respect to the forces of demand there are differences of opinion as to the part played by excluded demand in price determination. Davenport seems to suggest that the whole of the demand series has some influence; Taylor and Wieser give much weight only to the first excluded buyer, that is to say, to the uppermost series of the ineffective demand.

On the supply side the argument of this section should not be interpreted to mean that marginal costs have no significance. In an immediate sense they are vitally important, because if they are not covered by demand prices, production and supply will fall off, but as has been several times pointed out, this is no valid ground for a fundamental distinction between short- and long-period prices, for costs are not an independent and final entity.

But while the distinction made by the older economists cannot be maintained, and although there is no fundamental difference between the formation of prices in the long and the short market, it is not safe to push the argument to the opposite extreme and to assert that the two markets are identical with respect to the pricing process. Some economists, Walras for example, have inclined to this view, but the moment we have to take production into account several factors enter into the problem. One is that the proportions of the factors required for the manufacture of any commodity are not fixed but variable. At the margin a wide range of substitution is possible. The time element in production, too, cannot be ignored. But we shall return to these matters and the market for productive services, in the chapters on distribution.

11. Some Effects of Changes in Demand on Price

In the last chapter, an analysis was made of some of the effects of an expansion of output of any commodity. We shall now close that circle by noting some effects of changes in demand on prices. This is necessary because in Chapter VIII one or two facts were taken for granted.

The short-period market price presents no difficulty. With the supply given (within limits), an increase in the demand for any commodity would raise its price, though not necessarily proportionately. A decrease in demand would have the opposite effect. To probe the matter a little more deeply, the increase in price might result because the commodity in question has risen in the scale of preferences of the marginal buyer, or because the demand has increased in intensity with respect to buyers higher up in the demand scale, in which case the margin itself would rise. The opposite considerations apply in the case of a decrease in demand and a fall in price.

But the matter does not end here. If the resources of the buyers remained constant, the rise in the price of one commodity in consequence of an increased demand would have repercussions throughout the whole range of demand for commodities. The decreased surplus available for expenditure on other commodities would not necessarily be adjusted proportionately to the initial scales of the buyers; neither would the least urgent want be always eliminated. It is quite possible that the demand for the remaining ($n - 1$) commodities would be rearranged on a new scale, so that even in the short market an increased or decreased demand for one commodity may possibly have far-reaching and unexpected consequences in some direction or another.

Over a long period the position may be very different, because the conditions of supply can no longer be ignored. If an industry is working under diminishing returns because of the relative scarcity of one of its factors of production, an increase of demand will accentuate this

scarcity, and the increased demand will be realised in an increasing price. An extreme case was the increased demand for home-grown food stuffs during the war years, 1914-1918¹. It was similar circumstances that sponsored the theory in the early nineteenth century that, with an increasing population pressing on poorer and poorer soils, the relative share of the product accruing to profits and wages must tend to decline.

In the short-period market, with supply given, unless the increase of demand was very great the rise in price would probably be less than proportional to the increase of demand. Under the conditions of diminishing returns, however, it is likely that the rise in price would be more than proportional to the increase in demand, simply because under such conditions the tension of relative scarcity would be more difficult to ease. But it is difficult to generalise, because the precise results would depend on the degree of intensity of the diminishing returns and on the degree of intensity of the demand.

The wider effects of an increase of demand when an industry is working under diminishing returns may be very serious, particularly if it is a primary necessity that cannot be replaced: in such cases the adverse effects on other branches of production may be very marked. Again, if the commodity in question is a term in a composite supply, *i.e.* one of a group in which substitution is possible, the effects may be partly counteracted and the effects on other branches of production mitigated.

The effects of a decrease of demand for a commodity produced under diminishing returns are equally important. With a decrease in the pressure on the one or more scarce factors that is causing the diminishing returns, the smaller production would be produced at a lower cost per unit; the selling price of the product would fall and the demand in other branches of production would increase.

¹ This is not a very long period.

A greater output in an industry working under increasing returns would tend to a lower selling price per unit, as the larger output would probably be produced at a lower average cost. But as has been pointed out already, the fall in costs would gradually be arrested by the rising prices of the factors of production, unless that tendency was more than offset by new inventions and methods that economise the uses of the factors of production. In the case of a decrease of demand the effects on price would be reversed, as the advantages of large-scale production would be curtailed. In other words, average costs would rise as large-scale plant and equipment were not used to maximum capacity.

But as shown in the consideration of the supply side only, various qualifications and limitations must be taken into account. The terms short and long period are quite arbitrary. Even in the changes that belong to the long period, as distinct from the immediate market, an unexpected and great increase in demand would tend to throw most industries into a state of diminishing returns for a time, more or less long according to circumstances, because of the difficulty of expanding all the various resources entering into production of a commodity in the same proportion. All industries would not experience the same difficulty in making the necessary adjustments; hence the effects of an increased demand would vary very widely.

In certain circumstances food stuffs may remain in this position for a long period if imports are restricted either naturally or artificially. Even an industry working under increasing returns, as we have already seen, may be pulled, for a time, beyond the optimum point, with adverse reactions on price. On the other hand if an industry were approaching the optimum point, and if the increase of demand were not too excessive, the effects on price may be small even in the short period.

In all cases of changing costs the immediate and ultimate effects may differ considerably.

In the case of constant returns, *i.e.* where the products of an industry can be expanded within wide limits at an approximately uniform cost, changes in demand would have little appreciable effect on price; but an increase or decrease in the demand for one of this class of goods would have effects on the demand for the products of other branches of production.

12. Joint Demand

Corresponding to the phenomena of joint supply we have the phenomena of joint demand. There is a joint demand for pens and ink, motors and petrol; and the cases in which one good can only be used in conjunction with another are very numerous.

In one sense, joint demand is of special importance when we consider producer's goods. Timber, bricks, iron goods, and labour are jointly demanded for the building of houses, and the same applies to the production of steel, and ships, and so on. So far from joint demand being an isolated phenomenon, it is practically universal, considered from the point of view of producers of final commodities. At the same time, although it is true in an ultimate sense that the demand for producers' goods is derived from the demand for consumers' goods, yet the immediate demand for them comes from entrepreneurs.

An important case of joint demand concerns the demand for a good which is one of two or more that are supplied jointly from a common source, like wool and mutton, hides and beef; and particularly where the proportions of each are fixed by nature. It was pointed out in connection with joint supply that where the proportions of a joint product can be varied it was possible to ascertain the separate marginal expenses of production; on the other hand, where the proportions cannot be varied it is

impossible to calculate the expenses involved with reference to the specific branches of the product.

In a similar manner it is possible in some cases to estimate the separate marginal utilities of the respective products. In the case of joint demand for building materials, it is possible to vary the quantities of bricks and timber used. To estimate the marginal utility of timber used we should require two combinations—houses of similar size and type, the first in which the brickwork used was at a maximum, and a second in which the timber used was at a maximum. The extra efficiency of the additional brickwork in the one case, and the efficiency of the additional timber in the other case may be regarded as the marginal utility of the brickwork and timber respectively.¹ This could be done because there would be advantages and disadvantages in each case.

In the same way, the marginal utility of physically joint products in which the proportions can be varied can be isolated, but where the proportions cannot be varied this is impossible.

13. Some Effects on Prices of Changes in Demand for a Joint Product

Let us take first the comparatively simple case of a product *A*, which is supplied jointly with product *B* in proportions fixed by nature. If the demand for *A* increased, and we assume that other conditions remained constant, the immediate effect would be a rise in the price of *A*; but this would stimulate its production, and the price of *B* would fall. The final results over a long period would be more complicated. Much would depend on the conditions of supply, and the elasticity of the supply of the joint product with respect to the new demand

¹ In practice a case like this would prove very complicated; the marginal utility of machinery and labour would be isolated much more readily; but the general principle is the same.

price for *A*. If the supply expanded easily and greatly in consequence of the new demand price for *A*, the long-period price for *A* might diverge but little from the initial market price of *A*; it might conceivably fall a little lower. In such a case, with the demand for *B* constant, the much greater supply of *B* would tend to cause a heavy fall in its price.

Now in the case of a physically joint product in which the proportions can be varied the results would not be the same. An increase in the demand for *A* would raise its price as before, assuming always that other conditions remained constant, but the increase in the supply of *A* called forth by the higher demand price would not lead to a proportionate increase in the supply of *B*. The percentage increase in the supply of *B* would depend entirely on the extent to which the proportions could be varied.

In the case of physically joint products, the degree of variability is limited; to take, therefore, the familiar example of wool and mutton, an increase in the demand for wool would certainly increase the supply of mutton, though not proportionately; therefore the fall in the price of mutton would be less than in the first example. Actually, of course, the quality of the extra supply of mutton would be adversely affected; hence the fall in price would be confined mainly to particular markets, and the superior grades of mutton would remain unchanged in price, unless substitution on a large scale took place.

But, as we have already seen, the most important cases of joint demand are for goods that do not come physically from the same source. In the example of the building of houses, timber, bricks, concrete, and in some cases, iron are demanded jointly.

Now the supplies of these products are quite independent. An increase in the demand for, and the demand price of, bricks, does not call forth an involuntary increase in the supplies of any other factor demanded jointly. A rise in

the price market of bricks does not necessarily lead to an increased supply and fall in price of any of the other factors. A fall in the price of these factors would only result if for some reason or other it was desired to increase the proportion of brickwork used; the existing supplies of one or more of the other factors would then be in excess of the demand and their market price would fall. The final result would be that the production of these factors would decline until supplies were adjusted to the lower level of demand.

But an increase in the demand price for bricks would most probably be caused by a relative scarcity of that factor; hence, as timber and concrete are to some extent substitutes for brickwork, in this case an increase in the demand price for bricks in the first instance would probably be immediately followed by an increase in the demand price for either or both of timber and concrete. The secondary effect of an increase in the demand price for bricks would be a rise in the demand prices for timber and concrete, so that a rise in the demand price of one joint product may finally be spread over a number of others. Whether the spread would be uniform or not would depend on a number of circumstances: on the purely demand side, on the degree of suitability of the various factors; and on the purely supply side, on the relative difficulty of overcoming degrees of scarcity.

Cases of decreases in joint demand present no difficulty. As they can be argued on converse lines a detailed exposition is unnecessary.

14. Derived Demand

So far we have omitted labour from the discussion for a particular reason. The case of joint demand for producers' goods from independent sources is sometimes called derived demand because the demand for any set of resources is a demand derived from the final product. No difficulty need

arise over the distinction: joint demand is a demand for two or more factors necessary for the final product, and we can say with equal truth that the demand for each one considered singly is a derived demand from the final product.

The term derived demand is often used with respect to the demand for labour. In house-building, the demand for plasterers is derived from the demand for bricklayers, and so is the demand for carpenters and plumbers, though, of course, they are all demanded jointly, and the demand for each and all is derived from the demand for houses.

The effects of an increase or decrease in derived demand, including labour, have already been dealt with under joint demand, but special interest is attached to cases of derived demand for labour such as we see when plasterers are required with bricklayers. An increase in the demand for bricklayers is an increase in demand for plasterers, etc.; and a decrease in the demand for bricklayers lowers the demand price for plasterers, etc.

To the extent that the demand for each type of labour is derived from the demand for others, it is possible for one type, relatively scarce, to appropriate some of the gain that legitimately belongs to the others.

This explains some of the peculiarities in building-trade wages, at any rate before 1914. Types of labour demanding similar skill were paid at different rates, and the carpenter, superficially at least, the most skilled of all, and under greater expense with respect to his tools, was in the worst position of all.

The demand price for labour is derived from the demand price of the product. This is of vital importance in such cases as the building trade, where wages account for so high a percentage of total expenses. It shows clearly that unless the demand prices for houses is very high, which is the same thing as saying that unless the housing shortage

is very acute, there is a very definite upper limit on the demand price for labour, and a limit which, as Marshall pointed out many years ago in connection with the miners, organisation among the workers cannot pass.

15. Composite Demand

The alternative markets for any factor of production or commodity constitute what is known as composite demands; this refers to many manufactured goods as well as to labour and raw materials. Thus leather is demanded by bootmakers, by saddlers, by makers of fancy goods, etc. There is a similar composite demand for cast iron, for paper, and for most other goods. There is competition between the different users of any commodity whose demand is composite, and the price is fixed in the same way as in the case of any article offered to a number of competing buyers.

The effect of changes in demand for any of the alternative uses of leather, for example, is self-evident. The immediate effects of an increase in demand for leather for boots would intensify the scarcity of leather for saddles and fancy goods, and raise their price, not equally, but in relation to their degree of intensity of demand respectively. An increase in the demand for boots, then, would tend to increase the price of all goods into which leather enters, but not uniformly. The intensity of demand, and the extent to which leather entered into the composition of the product would be the deciding factors in each individual case. The difference between the case of leather and that of coal and iron should be noticed. The supplies of coal and iron could be quickly increased, but the supplies of hides could be expanded only comparatively slowly.

Conversely, a decrease in the demand for boot leather would be probably followed by a fall in the price of most goods into which leather enters. The amount of the fall

would again depend on the urgency of the demand for any specific commodity, and the proportion of leather used in its manufacture.

There is a close relationship between joint supply and demand, and composite supply and demand. Beef is supplied jointly with hides, and is demanded jointly with vegetables, as both are considered essential for a proper meal. With mutton, beef is in competition so that beef and mutton are composite supplies. Beef, however, is demanded for more than one purpose—directly for the dinner table, and for Bovril, etc. These different uses form a composite demand for beef.

These relationships bring the fact that changes in the economic system can never be isolated events into high light. No change can be made without producing another at some point of the economic system. In cases of composite demand, an increase in demand in one direction leads necessarily to a decrease in demand in some other direction; in the case of joint demand an increase in the demand for one commodity causes an increase in the demand for some other commodity. Not only prices, but all economic relationships form an inter-dependent system.

The following diagram may be found useful:—

JOINT DEMAND.

(DERIVED DEMAND for paper
and for ink.)

paper ↘
ink ↗ books → buyer.

COMPOSITE DEMAND.

Labour ↗ buyer (wool manufacturer).
↘ buyer (cotton manufacturer).

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CHAPTER X

IMPERFECT COMPETITION AND MONOPOLY MARKETS

1. Imperfect Competition and Monopoly Defined

Absolutely perfect competition is hypothetical only. In concrete experience we meet with only a modified form of it, sometimes called pure competition, and this, as we have already seen, requires two essential conditions—a large number of independent buyers and sellers or producers, and a uniform or standardised product. Strictly speaking, we should also add that costs of transport must be negligible, and that buyers and sellers should possess a wide knowledge of market conditions.

The field open to pure competition, however, is limited, and tends for various reasons to become more limited.

In the first place the actual markets themselves are more or less imperfect owing to the existence of transport costs which narrow the range of possible competition, and also because of the lack of knowledge on the part of the buyers. Secondly, in every case, for various reasons, there is not always a large number of independent producers. Thirdly, and this factor tends to grow in importance, in many instances the product is not a uniform or standardised, but a highly differentiated thing. This means, as will be shown presently, that the actual market is often not a single market but rather a series of related markets in which each seller has a partial monopoly of his own product.

It follows from this that the term monopoly is not an easy one to define with precision. Perfect monopoly is probably as hypothetical as perfect competition. The nearest approach to this state where the bulk of the supply of a commodity and its substitutes is under the control of one firm is perhaps more correctly described as pure monopoly. Between the extremes of pure competition and pure monopoly, there is a wide field in which monopoly elements are everywhere present, and in this field, such competition as exists is called by some writers imperfect competition, and by others, monopolistic competition. Monopoly, so-called, is only that portion of the field in which competition is so imperfect that it can exert only a very slight effect.

Neither imperfect competition nor monopoly is a simple concept. Each includes within itself a wide range of cases.

2. Product Differentiation

This is merely a technical term for a familiar fact. What is substantially the same article in a physical sense is supplied by different firms in differentiated forms—packages of different shapes, and done up in different ways. Matches, cigarettes, tinned goods of various kinds are typical examples. Each brand is characterised by a special name or trade mark, which, in effect, stamps it as a special product, and so far as it acquires this character, its producer becomes a partial monopolist, because he has a monopoly of supply of this particular brand. He is only a partial monopolist, however, because his particular brand has to meet the competition of possible substitutes, and the possibility of substitution limits monopolistic power. If the proprietors of, say, Players' cigarettes, for example, attempted to increase profits by raising prices, many of their customers would substitute Gold Flake, unless they could be persuaded by some means or other that Players'

cigarettes were of such a nature that they could not be substituted satisfactorily.

It is more likely, however, that an attempt to raise profits would be made by an endeavour to increase sales at the existing prices. But in any short period the number of smokers, and the quantity of tobacco consumed by each, is roughly fixed. An increase in the sales of one brand of cigarettes, therefore, must mean a shift of demand from other brands to the one in question. But a shift of demand can only be accomplished by persuading the public that one brand of article is superior to another. That means that when competition becomes imperfect another set of costs is required for the marketing of the product. Such costs are called selling costs.

3. Selling Costs

Not all the costs incurred in the marketing of a product are selling costs. Costs of transport, for example, are undoubtedly costs of production. Selling costs in a strict sense are costs incurred with the object of changing the demand curve for a product, that is to say, for the purpose of shifting demand from one commodity, or brand of commodity, to another.

Selling costs have a wide range and include a variety of expenses such as those of a sales department; the costs of providing special facilities and comforts for customers; and the costs of shop window displays. The most important type of selling costs, however, is the expenses of the various kinds of advertising.

Advertising, it will be noted, is unnecessary, and, indeed, actually wasteful, when competition is pure or perfect. There could be no point in any producer advertising a uniform or standardised product, for his advertisement would apply with equal force to the products of all his competitors, so that no amount of advertising would cause any shifts of demand.

The case is different when competition is imperfect and the product is differentiated. The market can no longer be taken as given; it has to be created. Advertising does this in several ways. In the first place it widens the possible market very considerably by diffusing the necessary information. If Brown decided to put a new pill on the market, the number of possible buyers with whom he could establish a direct contact is relatively small. Advertising, however, can make the knowledge of his pill world-wide, and it can do more for Brown than that. Advertising can be so directed as to cause a definite shift of demand from similar pills to those of Brown. In some cases it is possible through force of suggestion to rearrange wants and even to create new ones.¹

All that can be said of costs of production (more accurately, expenses of production) applies equally to selling costs. As output increases, selling costs per unit may fall, rise, or remain constant, according to circumstances; and where selling costs are incurred, it is evident that they must be covered as well as the expenses of production in the long run, if output is to be maintained.

In the case of imperfect, or monopolistic competition, the so-called cost of production curve is really a curve of combined production and selling costs. This is not without significance, for the two series of costs, considered separately, are not necessarily parallel. The combined curve may be falling more gradually, or rising more sharply than the cost of production curve. The optimum scale of production may differ, therefore, from what it would be under pure, or perfect competition, as when selling costs are included, the minimum average cost of producing may be either to the left or the right of the point of minimum cost on the cost of production curve alone.

¹ There is an excellent account of Selling Costs in E. Chamberlin's *Theory of Monopolistic Competition*.

4. Imperfect Competition between Producers

For reasons which have already been noted in part, the tendency to monopolistic conditions is very marked in the modern world. Some monopolies are legal in the sense that they are directly due to State action; it is often difficult to obtain permission to build a railway, but, when built, competition is prevented by the very fact that State consent is needed before a new line can be constructed. In England, before the War, the railways held a practical monopoly of transport, except over short distances. Inn-keeping is another example of legalised semi-monopoly: while State businesses like the Post Office are still clearer examples. Again, monopolies may be built up by an intelligent understanding of consumers' needs, and such monopolies may be independent of increasing returns; cases sometimes occur where demand is restricted; the names of Bradshaw and Debrett suggest examples.

Certain industries are limited with respect to competition by their very nature. Some forms of contracting and public works involve gigantic operations spread over a long period which necessitate very expensive forms of fixed capital. Railway contracting, and certain types of bridge-building, and ship-building can be undertaken by very few firms; competition, therefore, is confined to a very small circle so far as price-fixing is concerned.

In the case of reproducible commodities, large-scale production tends to limit competition, and the number of producers. Where the economies of large-scale production are important, so long as there are a large number of independent producers engaged in producing a commodity, no one producer will be working on a scale large enough to produce at the minimum average cost. Every producer has a strong incentive, therefore, to eliminate rivals by cutting prices because with a larger scale of production his average costs will be lower, and up to a certain point his saving in costs will outweigh the loss of revenue due to the

fall in selling prices. This process of elimination will continue until the control of the industry is in the hands of a relatively few producers.

Where the costs of transporting a commodity from the producer to the consumer is by no means negligible, and especially when the producers are widely scattered, a severe restraint is placed on competition. In these circumstances, any producer can vary his output and raise prices by an amount roughly equal to the cost of transporting the output of his nearest rival, for until the price rises by at least that amount a movement of commodities is not encouraged.

Lack of knowledge of market conditions on the part of the buyers is another factor limiting competition. Even a standardised product will not necessarily sell at a uniform price even in the same market unless the buyers are aware of the price charged by each seller.

But, as has been already shown, the most important factor limiting competition in the modern market is the differentiation of the product. Whether the differences are real or imaginary the effect of differentiation is to give to each producer a partially independent market, and a partial monopoly in that market. The economic significance of this is that each producer, when working in conditions of imperfect competition, produces an appreciable proportion of the total supply. Variations in his output therefore affect prices.

It follows from this that the conditions that help to produce imperfect competition must also tend to perpetuate it. If the production of a certain commodity has fallen into the hands of a few producers so that monopoly profits are being gained, it does not necessarily cause new producers to enter that field and expand output until prices have fallen to the level of necessary costs. Under perfect or pure competition this must happen, but when a producer (whether an existing one or a new rival) produces

an appreciable portion of the total supply, he can only market an expansion of output by reducing prices. This will not only deter existing producers from expanding output, but it will prevent new firms from competing, especially where expensive fixed capital is required, because the fall in selling prices will cancel out surplus profits.

5. Individual Equilibrium under Imperfect Competition

We have already seen that when competition is perfect, or pure, any individual producer can sell as much as he pleases at the ruling market price without causing any perceptible change in market prices. If he decides to produce an extra unit he will add to his total revenue the price of that unit, and, it is important to notice, price or average revenue will be equal to marginal revenue. He will continue to expand output so long as marginal revenue is greater than marginal costs. It is clear then, that he will be in equilibrium when marginal revenue equals marginal costs, and both will be equal to average revenue or price. At this point, he will not only be in equilibrium but his profit will be at the maximum possible in the given conditions.

If we now turn to conditions of imperfect competition, or monopoly, in some important respects the position of the individual producer will remain unchanged. He will, as before, seek to maximise his profits. He will therefore continue to expand his output until his marginal revenue is equal to his marginal costs. At that point he will be in equilibrium, for if he sold one unit less he would lose more in revenue than he saved in costs, while on the other hand, if he sold one unit more his marginal costs would exceed his marginal revenue.

There is, however, a fundamental difference between the two cases. Under imperfect competition, or monopoly, selling price will no longer be equal to marginal revenue

and marginal cost; it will be higher than the point of intersection of these curves.

The reason for that is this. As the individual producer is now producing an appreciable portion of the supply, the demand curve for his product is no longer a horizontal straight line; it is a curve sloping downwards from left to right. In other words, as output is expanded, unit by unit, the selling price of each unit is gradually lowered. That in turn lowers the average price of all unsold units of the supply. The result is that he will cease production at some point at which selling price is higher than marginal costs.

This analysis places the monopolist in a somewhat more favourable light than that in which he has been regarded in the past. The motives and incentives to economic activity are identical in every case. The individual in the perfect, or pure competitive market behaves precisely as the pure, or partial monopolist. The results of their activities differ only because the forces in their environment are different. In the one case, these forces compel the individual to expand his output to the point at which his marginal costs equal selling price; in the other case, economic forces permit him to stop at some earlier point. Speaking generally, however, as soon as any limitation is placed on competition, the position of maximum profits is one of smaller output, higher production costs, and higher selling prices, than would be the case under perfect or pure competition.

It may be noted in passing that all that has been said on the subject of commodities applies also to the hire prices of factors of production. It is only in conditions of perfect competition that factors of production will be hired up to the point at which their hire price is equal to the value of their marginal product. As soon as competition becomes imperfect producers will cease hiring at some earlier point, and for the same reason as that given in the case of commodities.

6. Imperfect Competition between Buyers

Imperfect competition and monopoly are usually conceived with reference to the producers; free competition between the consumers is usually taken for granted.

In the case of consumption goods this assumption is normally correct, as the individual demand for most articles in general use is so small a portion of the total demand that no amount of variation in the demand of any one individual for any commodity will affect its price. Whether I decide to cease smoking altogether, or to increase my consumption of tobacco up to seven ounces a week, I am fully aware that the market price of tobacco will remain unchanged.

There are cases, however, in which a variation in demand by an individual, or a group of persons, can and does appreciably affect prices. If, for example, a large retail store absorbs the bulk of the output of a certain producer, and if this producer has no convenient alternative market, it is possible for the store keeper, by varying his demand, to appreciably affect the prices he must pay for these goods.

But the most important case of imperfect competition between buyers is that of hiring factors of production, especially labour. In any circumstances the number of employers in an industry is relatively small compared with that of the number of workers. Large scale industry, and combinations among employers, tend to confine that number within narrow limits, and in consequence, it is not easy for a worker to change his employer. In many cases, therefore, an employer can affect the hire price of labour by varying his demand for it, and this fact has had an important influence on trade union development. It should now be clear from what has been said in another section, that where competition between buyers of labour is very imperfect, less labour will be employed, and at a lower wage than would be the case in perfect competition.

output at any reasonable amount he pleases, so that all is sold; again, he may fix price at any reasonable level; he cannot do both things at the same time. If he fixes output, it will be sold completely at a price not greater than marginal demand price; if he fixes price, his output is settled by the marginal buyer. Maximum net revenue will not occur when price is greatest or when sales are largest, but at a position between these two; nor will the output or the price normally be the same as it would under free competition.

Suppose a man finds on his land an unlimited supply of oil which has special properties and which can be collected without expense. Under free competition the price would be zero, for, as the supply is unlimited, marginal demands can be satisfied down to zero. As it is, he may fix the price as high as any person will pay. The need of one man may be so urgent that he will pay £10 a gallon for a small quantity, and many will pay at this rate if they cannot obtain the oil otherwise and they require it in medicinal quantities; thus a small steady demand may exist at this price. Again, if the owner is philanthropic, and doles out the oil, a very large demand may exist, but sooner or later it will be satisfied. Neither of these conditions will correspond to a maximum of receipts; if the price is very high, the demand is very small, and *vice versa*; the greatest revenue will be received at some intermediate position. Consider an imaginary demand schedule.

PRICE PER GALLON	NUMBER OF GALLONS SOLD	TOTAL PRICE
£800	A medicinal dose	£2
£100	1 gill	£3 2s. 6d.
£10	1 gallon	£10
£1	20 gallons	£20
5s.	100 "	£25
4s.	150 "	£30
3s.	300 "	£45
2s.	500 "	£50
1s.	1000 "	£50
6d.	1600 "	£40
zero	20000 "	zero

It is supposed that the oil finds new uses as its price falls.

The price will be between one and two shillings, and the amount sold between 500 and 1,000 gallons; it seems probable that the total receipts will rise above £50 at some position between these two; within this region neither the price nor the amount is separately a maximum, but their product is greatest. The position is obviously far removed from the competition equilibrium position, at which the price is nothing.

The next example leads to actual conditions, where price is a complicating factor; and the following schedule will be easily followed. The gallon is again the unit.

PRICE PER GALL.	EXPENSES PER GALL.	SUPPLY	RECEIPTS	TOTAL EXPENSES	NET REVENUE
£10	1s.	1 gall.	£10	1s.	£9 19s.
£1	1s.	20 "	£20	£1	£19
5s.	1s.	100 "	£25	£5	£20
4s.	1s.	150 "	£30	£7 10s.	£22 10s.
3s.	1s. 3d.	300 "	£45	£18 15s.	£26 5s. -
2s.	1s. 6d.	500 "	£50	£37 10s.	£12 10s.
1s.	1s. 9d.	1000 "	£50	£87 10s.	£37 10s. loss

In this case diminishing returns are in force, so that net revenue per unit decreases owing to increased expenses per unit, as well as to lowering of marginal demand price. The most favourable price will be about 3/-, and the quantity sold at that price is 300 gallons. The same principle will hold if the supply is taken as a rate instead of a stock.

This is not a likely price under free competition, for it does not represent an equilibrium position. Suppose ten producers supplied 30 gallons each; if they were not combined against the consumer one of them would be more than satisfied with the profit of 1/9 per gallon and

would wish to produce more; he would not fear to spoil his market, for his own extra production would be small in comparison with the total product of his rivals; if a monopolist increases production by 10 per cent., *i.e.* from 300 to 330 gallons, price must fall, but a single producer increasing production by 10 per cent., *i.e.* from 30 to 33 gallons will hardly affect the market. Ten producers in combination would limit supply to 300 gallons, but when each acts alone the most alert will extend supply: he knows that his individual gain will more than balance the loss consequent on the lowering of price due to increased supply. Put concretely, a man would rather clear $1/8$ per gallon on 40 gallons than $1/9$ per gallon on 30 gallons; all cannot make this extra gain; if they attempt it, the total production will reach 400 gallons, and the net gain will drop to a little over a shilling (*i.e.* $2/6 - 1/4\frac{1}{2}$) per gallon.

Yet the others must follow suit; by a slight fall in individual supply price the first producer threatens to capture the market, and the others can still make a good profit at the lower price. The marginal seller forces the price down to equilibrium point. The tendency under monopoly is thus to sell a less quantity at a higher price than under free competition. This is normally true whether the commodity in question is produced under conditions of decreasing or increasing return.

9. Pure Monopoly and Control of Supply

The illustration of maximum net revenue given above was purposely over-simplified, but it served to bring out the dependence of maximum net revenue on the control of supply. The monopolist, then, can influence prices in only, and in precisely, the same way as any other producer: by regulating the supply.

But the monopolist cannot fix prices altogether arbitrarily. The position of his objective, maximum net revenue, is influenced by the conditions under which the

supply is produced, and again by the conditions of demand, whether elastic or rigid. The problem is further complicated as a high or low elasticity of demand may be correlated with great or small difficulties in increasing the supply.

Where monopoly produces an article under conditions of constant cost, *i.e.* where supply can be expanded considerably at approximately the same cost per unit of output, the supply that will be put on the market will depend on the elasticity of demand. If the demand is very elastic, *i.e.* if it increases rapidly with slight falls in price, it may pay the monopolist to enlarge his output to the fullest extent of his capacity, because the net revenue,—(selling price per unit—cost price per unit) \times number of units sold, would be probably greater than in the case of a lower volume of output; assuming, of course, that the price in each case was fixed so as to just take the amount offered off the market.

Suppose for illustration that the cost per unit for supplies of 100 or 500 units were £1 per unit, and that 100 units could be sold at £2 per unit, and 500 units could be sold at £1 5s. per unit. In the first case the net revenue would = £100, and in the second case £125.

On the other hand, if demand were rigid or only slightly elastic, it would pay the monopolist to restrict supply and sell a small quantity at a high price.

If the article is produced under conditions of decreasing costs or increasing returns, the tendency, from the supply side, is for the monopolist to continually expand his output so as to take advantage of decreasing costs. Here again, however, the supply offered will depend on the rate of decrease in costs and on the elasticity of demand. It is not difficult to show that output would tend to the maximum with a high elasticity of demand and a rapid rate of decrease in costs. Where these conditions are reversed it is likely that the monopolist will maintain a high price by restricting the supply.

Consider the following extreme case (the figures are purely arbitrary), with a high rate of decreasing costs and a high degree of elasticity of demand, *i.e.* demand expanding rapidly with slight changes in price.

S.P.	C.P.	NO. OF UNITS SOLD	NET REVENUE
20/-	10/-	100	1,000 sh.
19/6	9/-	150	1,575 sh.
19/-	8/-	200	2,200 sh.
18/6	7/-	250	2,875 sh.
18/-	6/-	300	3,600 sh.
17/6	5/-	350	4,375 sh.

In such a case the monopolist would have an interest in expanding his output as far as possible.

Next consider another extreme case in which costs decrease more slowly, and in which demand is less elastic, *i.e.* it requires greater falls in selling price to expand.

S.P.	C.P.	NO. OF UNITS SOLD	NET REVENUE
20/-	10/-	100	1,000 sh.
19/6	9/6	150	1,500 sh.
18/-	9/-	200	1,800 sh.
16/6	8/6	250	2,000 sh.
15/-	8/-	300	2,100 sh.
13/6	7/6	350	2,100 sh.

In this case the monopolist would have no incentive to increase his output from 300 to 350 units. Not only that, but the percentage increase in net revenue, with an output between 250 and 300 units is not large. It is quite possible, therefore, in some cases that he would not consider it worth while to expand his output beyond 250 units.

The curves of elasticity of demand and decreasing costs determine the curve of net revenue, and as the two former

can vary infinitely, so can the latter. In concrete situations, costs are not likely to decrease uniformly; up to a certain point they may decrease sharply, after which various hypotheses are possible. They may decrease very slowly for a time or remain practically constant; and then decrease slowly or rapidly towards a new level; and so on.

These considerations apply with equal force to the curve of elasticity of demand. Up to a point, demand may expand rapidly with slight falls in price per unit of output; then, for a period, further expansion may necessitate relatively great changes in price. Precisely what will happen will depend on the nature of the commodity.

Where a commodity is produced under diminishing returns or increasing costs, if the demand is rigid or only slightly elastic the monopolist will limit his output, as the following example will illustrate.

S.P.	C.P.	NO. OF UNITS SOLD	NET REVENUE
20/-	10/-	100	1,000 sh.
19/-	10/6	150	1,275 sh.
17/6	11/-	200	1,300 sh.
16/-	11/6	250	1,125 sh.
14/6	12/-	300	750 sh.

If we assume the costs to rise more steeply with a demand that is only slightly elastic, we get the following result:—

S.P.	C.P.	NO. OF UNITS SOLD	NET REVENUE
20/-	10/-	100	1,000 sh.
19/-	11/-	150	1,200 sh.
17/6	12/-	200	1,100 sh.
16/-	13/-	250	750 sh.
14/6	14/-	300	150 sh.

In the first case, the monopolist will reduce his output to 200 units, and in the second case to 150 units.

Even with an elastic demand, if the rise in costs were at all sharp, the output would be strictly limited as in the following example:—

S.P.	C.P.	NO. OF UNITS SOLD	NET REVENUE
20/-	10/-	100	1,000 sh.
19/6	11/-	150	1,275 sh.
19/-	12/-	200	1,400 sh.
18/6	13/-	250	1,375 sh.
18/-	14/-	300	1,200 sh.

Under the above assumptions the output would not expand beyond 200 units. On the other hand, where a high degree of elasticity of demand was correlated with only a slight rate of increasing costs, the maximum net revenue would depend on a larger output.

As in the case of increasing returns, the degree of elasticity of demand for any commodity may alternate with the extent of the supply; and this is equally true of the rates of increase of costs.

10. Price Discrimination

Up to the present we have assumed that monopoly prices, as under competition, will follow the law of the market, that only one price can be charged at the same time, on the same market, for the same article. The term market is used here in the wider, not the local, sense.

It does not follow, however, that this will be the case if the monopoly is at all complete, for the monopolist will be able to increase his net revenue if he can apportion his sales between a number of distinct markets. In such a case he will be able to do what we saw was impossible in the case of the competitive market, that is, he will sell

units at a high price to those whose demand is keenest, and at a lower price where the demand is less intense.

If the monopolist had complete control he would naturally seek to classify the demand for his commodity into a series of markets, distinct and closed, in which the lowest demand price in the first was greater than the highest demand price in the second, and so on; and in that way he would appropriate a good deal of the consumers' surplus which under perfect competition would accrue to buyers high on the scale. It should be noticed that such a possible arrangement assumes that the commodity is not capable of retransfer from one market to another, for otherwise the object could be easily defeated.

An illustration usually cited with respect to the home market is that of different editions of a copyright book. Different editions are successively published at decreasing prices for different markets graded according to the purchasing power of possible readers. Different editions of books are not perfect non-transferable articles, but it is roughly true to say that the person prepared to pay 6/- for the first edition of a novel is not likely to wait until the publication of a sixpenny or shilling copy.

Transport charges provide numerous illustrations of discrimination. First and third class fares, workman's fares, and cheap holiday bookings are discriminations with respect to different classes of travellers, based on the supposition that these classes are fixed and non-transferable. In a similar manner discriminations are frequently made between different classes of goods.

A case of special interest is that discrimination between home and foreign markets usually described as dumping. Where the conditions of production are such that very large-scale production is accompanied by steadily decreasing costs, the monopolist has a strong incentive to work his plant to its maximum capacity. On the other hand the

limited elasticity of demand in the home market may be such that the maximum net revenue necessitates an output below the optimum from the point of view of decreasing costs.

In such cases it will be to the advantage of the monopolist to curtail the supply in the home market, and to "dump" the surplus abroad for what it will fetch, so long as the price does not fall below costs in producing the larger output compared with what they would have been had production been restricted to the demand of the home market.

Consider the following hypothetical example:—

HOME MARKET

S.P.	C.P.	NO. OF UNITS SOLD	NET REVENUE
20/-	10/-	100	1,000 sh.
19/6	9/6	150	1,500 sh.
18/6	9/-	200	1,900 sh.
17/-	8/6	250	2,125 sh.
15/6	8/-	300	2,250 sh.
14/-	7/6	350	2,275 sh.
11/6	6/6	400	2,000 sh.
9/-	5/6	450	1,575 sh.

Now the point of maximum net revenue for the Home Market would be 350 units at a cost of 7/6 per unit and a selling price of 14/- a unit. But by producing 450 instead of 350 units he has incurred a total cost of only 2,475 shillings; yet if he disposes of only 350 of them in the Home Market his cost is exactly 150 shillings less than it would have been had he stopped production at 350 units. We get thus the paradoxical result that he would save 150/- by destroying the last 100 units of the commodity. The paradox is explained by the reduction in the costs of the output, and the illustration,

though extreme and artificial, serves to explain why in the past commodities have actually been destroyed to keep up their price.

In this case our monopolist would most probably find a "dumping" ground over-seas and dispose of the 100 units for what it would fetch. As any price above costs of transport would be profit, it would be difficult to keep him out by tariffs, and he would make production difficult for the importing country if he were in a position to supply any considerable part of the demand in this way.

Fortunately, however, in this extreme case, if it proved difficult for any country to exclude the 100 units by means of tariffs, it would be equally difficult to prevent them by the same means from being re-exported back home. It is obvious that "dumping" is possible only if the "dumper" is protected at home by a high tariff on imports.

By a slight re-arrangement of the figures in columns 2 and 3 we arrive at the following result:—

S.P.	C.P.	NO. OF UNITS SOLD	NET REVENUE
20/-	10/-	100	1,000 sh.
19/6	9/9	160	1,560 sh.
18/6	9/6	220	1,980 sh.
17/-	9/3	280	2,170 sh.
15/6	9/-	340	2,210 sh.
14/-	8/9	400	2,100 sh.
12/-	8/6	460	1,610 sh.
10/-	8/3	520	910 sh.

In this case the monopolist will obtain the maximum net revenue in the Home Market if he sells 340 units at a price of 15/6 per unit and produced at a cost of 9/- per unit. If he extends production to 520 units he lowers the unit cost to 8/3 and, so far as the first 340 units are concerned he can save 255 shillings if he can dispose of the remaining

180 units abroad at a price equal to $(520 \times 8/3 - 340 \times 9/-)$, neglecting for the sake of simplicity, the expenses of transport.

Now the difference between the cost of production of 340 units and the cost of production of 520 units, under the assumed conditions is 1230 shillings or $6/10$ a unit. If the costs of transport, and the tariffs of the importing country, were moderate, he could afford to sell these units abroad below their costs of production at home, and he would have an incentive to do so because of the gain of 255 shillings above his maximum net revenue at home, had he ceased production at 350 units.¹

Elasticity of demand is a very important factor in price discrimination in the home market, as the elasticity of demand for any service or commodity varies according to the use to which that commodity or service may be put. Discrimination therefore divides up a market on the principle of varying elasticities of demand.

This fact is reflected in the policies of railway companies. It might appear at first glance that if a railway company can afford to issue an excursion ticket between two towns at a certain rate, that it should convey all passengers at that rate. That belief, however, is fallacious.

Railways have heavy annual charges to meet in the form of interest on capital, and maintenance of the permanent way, etc. If it were possible to accurately apportion costs, excursion tickets would be found to be issued below costs. But for various reasons, railway equipment and staff cannot be employed uniformly to maximum capacity; in other words, at certain times some resources stand idle. If, however, instead of remaining idle, they can be made to furnish any contribution to overhead expenses, it is an

¹ Too much importance must not be attached to these schedules. The figures are arranged to illustrate a particular principle and correspond to no individual case. These problems are treated much more satisfactorily by means of algebra or geometry.

advantage to the company. The market for ordinary fares is, however, relatively inelastic. To greatly increase the number of ordinary passengers, so large a reduction in fares would have to be made that the total receipts would probably diminish. The company therefore considers additional passengers from the standpoint of elasticity of demand. The demand for day and half-day tickets is more elastic than the demand for week-end tickets, and the demand for week-end tickets is more elastic than the demand for ordinary tickets.

The railway companies make these distinctions on the assumption that the demand for the different classes of tickets is not inter-changeable, and within limits, that assumption is approximately correct.

11. Certain Forms of Monopoly

(1) AGREEMENTS.—Increasing return does not invariably lead to pure monopoly. Big firms may fear the continuance of cut-throat competition, which weakens even the victor when he produces under total cost for a long time. Such firms may come to agreement, thus combining against the consumer and obtaining a partial monopoly. The terms "ring," "combine," "pool," "syndicate," "merger," etc., are of little use to us because their meaning is not precise, but there is a tolerably clear distinction between Trusts and Cartels: a trust is a unified business under single control, and a cartel is a collection of businesses acting in common. These represent the more permanent attempts to stifle competition.

In America there are temporary alliances which have the same aim: men or firms may make a combine to "rig the market," *i.e.* to influence market conditions, and to "corner" the supply, *i.e.* to buy up all the available supplies in the hope of so raising prices by restriction that a great profit may be made. If such a combination becomes more permanent, a pool is formed, and each

firm is voluntarily bound to certain conditions of supply and price; each unit receives a certain percentage of the total profits. Lack of loyalty often breaks up these unstable combinations. The railway agreements between certain groups of English railways before the war were somewhat of the nature of pools.

(2) CARTELS.—Cartels are more permanent in that they have a definite constitution. They may control the output of the individual members or the price of the products, or both, but there is normally no attempt to interfere with internal management or even with profits. Sometimes sales must be made through the medium of the company which forms the cartel. In practice, price and output are liable to be fixed to the advantage of the big and influential firms. The advantage of the cartel is that it creates a semi-monopoly and yet allows play to the initiative of the individual members. The institution has gradually developed on the Continent and is still commonest there, especially in Germany.

(3) TRUSTS.—The American Trust is the last stage on the road to monopoly. In one of various ways a number of powerful firms are brought under single control, each unit losing practically all independence. Examples are far commoner in the U.S.A. than elsewhere, but they occur in England: the tendency is seen in the case of bank and railway amalgamations. Such trusts may be the result of willing co-operation or of tyranny: sometimes firms band together to obtain economies, but oftener the stronger firms compel the weaker to come in through fear of continuance of cut-throat competition. The structure is variable. A true trust (now illegal in America) was managed completely by trustees who gave certificates to those who had given up their businesses to the oversight of the trust; each holder of a certificate obtained a proportion of the

total earnings decided by the estimated value of the original business.

The American Holding Trust is still more effective, for it allows of a certain independence of the units, thus avoiding some of the dangers of company management; each firm keeps its formal independence, but all the units are bought up by a new corporation specially promoted for this particular purpose. In England, "amalgamations" often attain the dimensions of trusts and their monopolistic tendency is equally marked, though the legal aspect presents points of difference; in industry, amalgamations are common in the dyeing and other sections of the chemical and allied trades. They are also of importance in some textile trades, *e.g.* sewing thread, and are prominent in shipping. This "rationalisation" movement is spreading.

There is a continuous chain from casual "understandings" and agreements through loosely knit and temporary "associations" to unified amalgamations. Such unions are not actually contrary to English law, but in so far as they are in "restraint of trade" they have no legal protection; the law mainly neglects their existence. In America virile business men have utilised national resources and have sheltered behind tariffs so as to build up powerful combinations which have compelled legal action; on the other hand, German laws have encouraged association, so that cartels have full protection. International combinations are also known, *e.g.* in relation to tobacco.

Of the two main forms of industrial monopoly, the cartel and the trust, the former is the less stable. The reason for this is that the essence of the cartel is agreement to limit output. Now the necessity to limit output is strongest during a trade depression when market capacity is at a minimum, but as a depression gives place to a boom, the necessity for a limitation on output is removed, and the cartel tends to pass into the trust. This is not a universal

rule, but it is approximately true to say that the cartel is related to depressions, and the trust to booms.

Related to these forms of monopoly is the tendency to vertical and horizontal combination. Vertical combination, as its name implies, is the unification of the successive stages of an industry from the production of raw materials to the manufacture of the final products in the same hands. Lateral combination is a union of producers in the same stage of an industry.

Speaking broadly, a trust is a vertical combination and a cartel is a horizontal or lateral one, though not necessarily so. But it is easy to see how the trust tends to take the form of a vertical combination, especially in the iron and steel trades. In these trades the market conditions for raw materials are very unstable, and this is largely true of intermediate products like pig iron and steel. But where large and very expensive fixed plant is used in the different stages of an industry it is of vital importance that the supply of products at any one stage shall be correlated with that of the next. This correlation of the production of the products at the different stages can best be obtained under the system of vertical integration.

In addition to this, vertical combination in the metal trades allows various economies to be effected. Fuel costs are very important, and under vertical control one heating of the metal can be made to serve several purposes, and waste heat and gases can also be made use of for purposes of lighting and power.

The iron and steel trades are thus peculiar fields for vertical combination, and it is easy to see why in these trades this form of combination tends to be permanent.

It is not difficult to see also why vertical combination has made little headway in the textile trades. There would be no, or at least little, economies in the costs of production with respect to those trades. There would be perhaps an advantage in controlling the supplies of raw

materials, but there are no special difficulties with respect to those supplies, and producers in the later stages can always by horizontal associations safeguard themselves against exploitation by the growers of raw materials. It is not easy to generalise as conditions vary from industry to industry, but the reasons should be clear why the tendency to vertical integration is stronger in the metal trades than in any other.

12. Rationalisation of Industry

In addition to the ordinary industrial tendencies to monopoly, *i.e.* tendencies accentuated by the desire for private profit, there is another force which has developed in the peculiar post-war conditions since 1919.

In the pre-war textbooks, the problem of monopoly was usually put in contrast with the ideal of competition, which in England, at any rate, had governed industrial relations since the beginning of the nineteenth century.

Considered as an abstract proposition the economic significance of competition is, as the textbooks have usually maintained, difficult to exaggerate, because its specific purpose is to ease the natural tendency to scarcity of resources.

Since 1914, however, circumstances have conspired to bring about a situation differing widely in many respects from the conditions of the nineteenth century, for on the one hand the present generation has witnessed a phenomenal development in mechanised production, while on the other hand, since 1919 we have passed through a series of trade depressions that appear to many judges to be of a much more serious character than the cyclical disturbances of the period 1797-1914.

With the investigation of the post-war depressions we are not here concerned, except to notice that one school of thought attributes the evil to the failure of competition and private individual enterprise to make the necessary adjustments of supply to demand quickly enough in a

world the dynamics of which have been intensified by the rapid development of automatic machinery and mechanical transport. Special circumstances, then, have forced many people to the belief that the tendency to equilibrium of demand and supply, which in the nineteenth century was effected by the free play of natural forces, must now be consciously and deliberately planned, if periodical depressions of trade are to be eliminated. This deliberate planning is called rationalisation of industry.¹

In one sense rationalisation is merely a new name for monopoly, for it seeks to control and limit output at its discretion. Its advocates, of course, introduce a distinction by claiming that, while monopoly in the pre-war sense was a device for exploiting the consumer, the main purpose of rationalisation is to apply scientific principles to the management of industry.

We have already seen that an individual firm can be too large or too small to function with the maximum efficiency. Rationalisation applies the same argument to any specific industry as a whole.

Now the optimum size of an industry varies with changing circumstances, and a long period of profitable production does tend, under free competition, to increase unduly the number of firms and to give the industry a productive power which may prove normally redundant in new circumstances. We need go no further than the Lancashire cotton trade for a suitable illustration, and the new circumstances may take the form of loss of markets through foreign competition, or technical progress improving the productive capacity of each unit of labour.

Under free competition a trade depression would tend to reduce the size of an industry by driving out of business the least efficient firms and other firms able to adapt their productive resources to some alternative use; but the

¹ Rather: *Planning Under Capitalism* gives a lucid account of developments in this country.

advocates of rationalisation contend that this is a slow and wasteful process, and could be more scientifically effected by monopolistic control, by which an industry would be divided among a small number of large firms acting in conjunction.

The advantages claimed for rationalisation are that supply could be consciously adjusted to probable demand, and the waste of excess production avoided. Moreover, in addition to the usual advantages of large-scale production, unnecessary duplication of stock and plant would be eliminated, and much capital locked up under competitive enterprise would be set free for alternative uses elsewhere.

Further arguments are that technical progress could be more easily diffused and that industry could be purged of obsolete plant.

This last point is of special importance for, as experience has shown, in many cases for various reasons industries do tend to become clogged with obsolete plant, and, in the absence of centralised control, adjustments are often difficult to make with the rapidity necessary under incessantly changing conditions.

13. Monopoly and Competition Compared

A general comparison between competition and monopoly is difficult, for the terms are indeterminate and vague. Perfect competition is hypothetical only, and actual competition contains within itself a great variety of shades. We can, however, make some comparison between perfect competition and monopolistic conditions.

If competition were perfect it is evident that productive resources would be so distributed as to yield the maximum economic advantage. That in turn means that each productive factor would be hired up to its full marginal worth, and each firm would be of the most efficient size. The economic system would also be fluid, and in consequence

it would be able to adapt itself to the changes made necessary by technical progress with a minimum of difficulty.

Against these advantages must be offset certain drawbacks. Perfect competition may distribute productive resources to the greatest economic advantage, but the greatest economic advantage may not be the maximum social advantage.

For it does not necessarily follow that the competitive equilibrium represents the condition most beneficial to the community as a whole. If two traders of equal means exchange stocks directly, the maximum satisfaction of each separately under the given conditions is represented by the equilibrium point; at any other position each can obtain additional satisfaction by further exchange. If the commodities are produced according to decreasing returns the equilibrium position will be the one at which the sum of the two satisfactions taken together is also a maximum. The case may be quite otherwise: if the seller is rich and the buyer poor, and the conditions of exchange are altered so that the goods are sold below true equilibrium price, they may be exchanged to a greater amount if the seller voluntarily or compulsorily extends production. The marginal utility of money to the poor man is high, so that when he gains money (or goods valued in money) from the other, he obtains more satisfaction than the rich man loses; thus aggregate satisfaction is increased. If a rich manufacturer foregoes part of his profits and sells at a lower price to poor consumers the increase of consumers' surplus will be greater than the satisfaction lost by selling below equilibrium price.

This is merely a special case of the general principle that if inequalities of fortune are smoothed out, aggregate satisfaction tends to be increased, for diminishing utility acts markedly in relation to money. Inequalities may be inevitable, and may be necessary to extended production,

but in themselves they are an evil. If one has £1,000 and another has £100 the poorer will probably obtain more satisfaction than the other loses if the amounts are equally shared. A more distinctive case is that of increasing returns: if a manufacturer produces beyond equilibrium point, the supply must meet a lower marginal demand, but the supply price may also fall, though less rapidly than the demand price. There will be a large gain of consumers' surplus; there will be a loss of producers' surplus, but as large-scale economies are available there will be a balance of good. Those who would have bought at equilibrium point will gain by the lowering, and the producers will lose this amount, but there will be a saving in cost to set against this loss. It would pay a group of consumers to subscribe a small sum to tempt the producer to further production: they would be more than recompensed by the resulting lower prices, if the producer were satisfied with the same profit as before, though such a course is impossible in practice.

Perfect competition may cause a divergence between private and public interests, or, in technical language, a divergence between the individual and social marginal net products in many ways. It may, for example, cause an undesirable factory to be erected on the fringe of a residential neighbourhood and cause a loss to the community in the shape of depreciated property and land values, that exceeds the advantage of the site to the producer.¹

Much has been said on the waste caused by competition, but waste has greater relevance to monopolistic conditions than to perfect competition. Advertising is the classic example, but advertising has no place in perfect competition; it is an essential characteristic of monopolistic conditions. Competitive advertising, designed merely to shift demand from one brand of commodity to another is

¹ This matter is discussed in detail in Pigou: *Economics of Welfare*; and Meade: *Economic Analysis, and Policy*.

undoubtedly a waste of resources from the standpoint of the community, however necessary it may be to individual firms.

Perhaps the most serious criticism that has been made of perfect competition is that it has failed to distribute income in the best interests of the community. In support of this, appeal is often made to the industrial and social history of England since 1760. In the early nineteenth century competition was never theoretically perfect, but it approximated to it fairly closely, and during the greater part of that century, income was badly distributed from a social point of view, however well it may have been distributed from an economic standpoint.

It is not difficult to point to certain drawbacks in monopoly. In the first place technical progress is likely to be much more rapid under effective competition than where the production of a commodity is in the hands of a single producer. The greater the degree of competition the more necessary it is for each producer to strive to lower his average costs. A monopolist in control of a certain supply is not likely to introduce a new technique unless the saving in costs is definitely greater than the loss of revenue resulting from the fall in selling prices as a greater output is offered on the market. Under free competition, if existing firms did not adopt a new invention or method, new firms would enter the industry, make use of the new technique, and thus pass on to the public the fruits of technical progress.

Secondly, there is always the tendency for a monopolist to restrict output. In the case of manufactured goods, and where the monopoly is not complete, the monopolist may produce more than the actual competitive output in some circumstances. That is not so when the monopolist controls the supply of a raw material. Since 1918, monopolists, or what comes to the same thing, combinations of producers, have introduced schemes of control of

the supply of many raw materials. That, in turn means that the output of certain things must be restricted.

When people contrast monopoly with competition, however, what they usually have in mind is a contrast between private enterprise and the control of some public utility by the State. But such a contrast is either pointless, as in the case of the Post Office; or unfair, as in the case of municipal tramways, for tramways can be, and to some extent are, subsidised either directly, or indirectly, from the rates, or from the other public services.

14. Monopoly and Competitive Output Compared

A comparison between the competitive and monopoly output cannot be made in general terms for reasons that have been given elsewhere. We can, of course, compare the output of an industry working in conditions of perfect, or pure, competition, with that of an identical industry working as a pure monopoly. In this case the output will always be smaller, and the price will always be higher under monopoly than in perfect or pure competition. The difference between the two outputs will vary from case to case according to the shape of the demand curve, the cost curves being assumed identical in all cases. Consider the following hypothetical schedule.

NO. OF UNITS	COST PER UNIT	SELLING PRICE	PROFIT PER UNIT	MONOPOLY PROFIT
1	£1	£10	£9	£9
2	£1	£9	£8	£16
3	£1	£8	£7	£21
4	£1	£7	£6	£24
5	£1	£6	£5	£25
6	£1	£5	£4	£24
7	£1	£4	£3	£21
8	£1	£3	£2	£16
9	£1	£2	£1	£9
10	£1	£1	—	—

If we interpret the cost column to include normal profits, that is to say, a remuneration equal to the average that could be obtained in other lines of production, then it is clear that perfect competition would force from the producers an output of 10 units, at which price the total costs would equal the total selling price. But where the monopolist can control the supply the output will be only 5 units, because at this output the net profit is at a maximum. It will be noted that the monopoly output is exactly one-half of the competitive output, and where the demand curve is a straight line, it can be proved mathematically that this must necessarily be the case.

It may also be noted, incidentally, that it is only when competition is perfect, or pure, that the equilibrium price is the price that equates supply and demand. An output of 5 units under monopolistic conditions will sell at an equilibrium price because as it gives the maximum net profit the monopolist has no incentive to either expand or contract output. But the assumption of monopoly does not change the character of the curves of supply and demand which are equated at an output of 10 units, but not at an output of 5 units.

As soon as we pass from perfect and pure competition to actual or imperfect competition, and indeed to actual monopoly, the comparison becomes difficult as we can no longer assume identical cost curves. It is only in perfect competition that firms must be necessarily of optimum size. As soon as competition becomes imperfect firms may not be of the most efficient size. A monopoly, by working on a larger scale of production, may therefore be able to lower average costs: but to do this it must expand output, and reduce selling prices. In actual circumstances, then, monopolistic control is not inconsistent with a larger output, and lower prices, than in so-called competition.

Even from the side of monopoly alone, comparison is not easy. In the schedule above, only production costs

are included in the cost column. Selling costs clearly have no place in perfect or pure competition. They are equally superfluous in perfect monopoly, and possibly in pure monopoly too. But in all cases of imperfect competition, including the extreme forms classed as monopoly, selling costs are an important item in total expenses, and the effects of selling costs may either strengthen, or reverse the tendency of production costs. Advertising, for example, may change the position and elasticity of the demand curve. We have, however, now carried the argument to ground rather too complex for the scope of this work.¹

Sufficient has been said on this matter to show that some, though not all, of the criticism made against monopoly is really criticism of large-scale production. Wieser has stated that the familiar picture painted of the monopolist is largely a legacy of English classical thought, and due to the fact that the early economists lived and wrote in an age when the relatively small, one-proprietor business was the normal unit of production.

Before leaving this section attention may be drawn to the fact that it is possible to have conditions of demand and supply in which more than one point of maximum net revenue is possible as is illustrated by the following hypothetical table:—

NO. OF UNITS	COST PER UNIT OR AV. COST	SELLING PRICE	TOTAL COST	TOTAL REVENUE	MARGINAL COST	MARGINAL REVENUE	MONO- POLY PROFIT
10	20/-	30/-	200/-	300/-	—	—	100/-
11	19/-	29/-	209/-	319/-	9/-	19/-	110/-
12	18/-	28/-	216/-	336/-	7/-	17/-	120/-
13	17/-	26/-	221/-	338/-	5/-	2/-	117/-
14	16/-	24/6	224/-	343/-	3/-	5/-	119/-
15	15/4	23/4	230/-	350/-	6/-	7/-	120/-
16	15/-	22/-	240/-	352/-	10/-	2/-	112/-

¹ For a complete analysis of the influence of selling costs the reader is referred to Chamberlin: *Theory of Monopolistic Competition*.

Now with an output of 12 units at a selling price 28/- and with an output of 15 units at a selling price 23/4 the monopoly profits are equal, but for various reasons it is unlikely in practice that the private monopolist would expand his output beyond 12 units.

In the first place the second maximum is problematical from the entrepreneur's point of view. Again, even assuming that he is in a position to estimate the probable future relation between the curves of aggregate costs and aggregate receipts, he has no motive to expand his output, because he will not ultimately increase his net revenue, and his next two units will be produced at diminishing profit.

It will be noticed that the production of the 13th unit involves a greater additional cost than the extra revenue received. At the 14th unit, this position is reversed; so that if production could be forced past the 13th unit it would be encouraged to expand. If the monopoly were publicly owned this would probably happen, because the monopolist would be able to confer great benefits on the consumer at no sacrifice of revenue.

This fact has been used by some writers as a strong argument in favour of the nationalisation of all monopolies, where practicable.

15. The Control of Monopoly Power

Schemes for the control of monopolistic power fall into two classes—schemes of a general nature; and schemes designed to evoke the competitive output.

The most familiar attempt to limit monopolistic power is by means of special legislation, anti-combination laws, or anti-trust laws as they are called in America. Unfortunately, experience has taught that such laws can be easily evaded. Another difficulty is that if these laws were carried to their logical conclusion, large-scale production would be greatly restricted.

So far as monopoly is due to product differentiation, any limitation of unnecessary or mistaken preferences on the part of consumers would tend to limit monopolistic power. In many cases a preference for this, or that, brand of a commodity is not warranted by the facts, and is due to lack of knowledge. The removal of such preferences by educational institutions of various kinds would do much to curb the power of certain trading associations.

The methods of the second class have for their leading principle the economic truth that resources will be used to their maximum efficiency when the marginal products of the factors of production are equal in all lines of production. This, as we have already seen, must be the case when competition is perfect; but whenever monopoly elements are present, this natural distribution of resources is impeded. A corrective is possible, however, either in the form of taxes and subsidies, or by means of price control.

Suppose, for example, that in industry *A*, the value of the marginal product of a factor of production is greater than the value of the marginal product of that factor in industry *B*, by any amount greater than the cost of transferring a part of that factor from one industry to the other, it is evident that too much of that factor is being employed in one industry, and too little in the other. If, therefore, a tax were levied on that factor when used in industry *B*, in proportion with the amount of it employed, and the proceeds used to subsidise the use of the factor in industry *A*, the employment of that factor would be discouraged in one industry, and encouraged in the other. This movement of factors of production would affect the relative output of products by the two industries.

The same movement of factors of production could be effected in a more direct way by fixing maximum prices for products, and minimum prices for the factors of production. If these prices were fixed so as to equalise

the value of the marginal products of the factors in all lines of production, the competitive output would be evoked.

Either method would be difficult to apply in practice in a comprehensive form, owing to the difficulty of measuring accurately the value of the marginal products of all factors of production in all industries.¹ In the transport services, some control of prices has been practised since the early railway age, but only for the limited purpose of preventing the exploitation of certain classes of consumers.

- REFERENCES. Hobson: *Economics of Distribution*.
Marshall: *Principles of Economics*.
Industry and Trade.
Mond: *Industry and Politics*.
MacMillan: *Reconstruction*.
Meade: *Economic Analysis and Policy*.
Rather: *Planning under Capitalism*.
Chamberlin: *Theory of Monopolistic Competition*.
Pigou: *Economics of Welfare*.
Robinson: *Economics of Imperfect Competition*.
Taussig: *Principles of Economics*.
Wicksell: *Lectures on Political Economy*.
Wieser: *Social Economics*.

¹ The difficulties in the way of these methods of control are stated very clearly in Meade: *Economic Analysis and Policy*.

CHAPTER XI

DISTRIBUTION—NATIONAL WEALTH AND NATIONAL INCOME

1. National Wealth

Before passing to the subject of distribution proper, it is necessary to give a brief account of that which has to be distributed, *i.e.* national income, which in turn is closely connected with national wealth.

National wealth is far from easy to define with precision: it is by no means easy to decide what to include and what to omit. It can be defined in a very wide sense so as to include all that assists, directly and indirectly, the productive capacity of the country. In one sense, of course, the character and condition of the people, the geographical situation, the natural facilities for trade and commerce may be counted legitimately as national wealth. But for practical purposes, however, something narrower and more definite is necessary; hence the statistician usually defines national wealth as the sum total of possessions held by the inhabitants of a country, singly and collectively, which can be exchanged or transferred.

Within this category must be included possessions owned by the people of the country in foreign lands, and from the total thus obtained must be deducted possessions held by foreigners in the country in question, and foreign debts.

It will be noticed that not only are free goods excluded from the above definition, but special human abilities—the skill and training of particular classes—as well. The reason for this is that such abilities cannot be exchanged or transferred.

Logical objections can easily be urged against this, as by such exclusion definite national assets are omitted, but human capital is not considered national capital, at any rate for statistical purposes, though it is certainly a factor in individual wealth.

Gross income from property held overseas (excluding shipping and financial services).

FIGURES IN MILLIONS OF POUNDS

1933	1934	1935	1936	1937
138	146	156	164	177

National wealth, then, is not quite the same thing as the sum total of individual wealth. In addition to special skill and abilities, war loan stock is obviously wealth to the individual, but it is certainly not wealth from the point of view of the State, for on a debt interest must be paid, and this interest merely represents a transfer of wealth from one section of the community to another.

2. Measurement of National Wealth

National wealth, even on the narrow basis defined above, is far from easy to measure with any degree of accuracy. There are two methods of measurement which can be used. We could take a census of all the transferable possessions in the country plus the addition and deduction noted above, and assign a monetary value to each. This is called the inventory method and is used to estimate the value of the personal possessions of an individual—his clothing, furniture, etc.

The inventory method is in many cases not the most convenient one to apply. It is not the method employed, for example, in the valuation of a business. Here, we do not take an inventory of the constituent parts of the business—

buildings, stock, machinery, goodwill—and obtain a total by a separate valuation of each item. On the contrary we capitalise the estimated profits the business may be expected to yield on the average over a term of years; and the same method is usually adopted with respect to the valuation of land and buildings, though in the latter case allowance must be made for depreciation. This method may be distinguished as the capitalisation method.

The chief statistical data for the measurement of national wealth is furnished by the income-tax returns. These fall, broadly speaking, within the following categories: (*a*) income from ownership of land and houses; (*b*) income from the occupation of land; (*c*) income derived from the possession of Government securities; (*d*) income earned in business and the professions; (*e*) and finally, the salaries of officials in the employ of the Government and Local Municipal and County Authorities.

In using the data above it is usual for statisticians to apply the capitalisation method to incomes from land and other real property—houses and buildings—and also to the profits arising from business and from farming. In the case of professional men, only the capital value of such possessions as are necessary to the performance of their duties is included; the capitalised value of the income from human, that is to say, non-transferable, elements, is excluded.

The capitalisation method is applied to income from foreign securities, including colonial stocks, but not to interest on home securities (Government and Local Corporation issues). The reason for this exclusion is obvious. The capital value of the interest received from home Government securities represents a sum that has been spent partly on war and partly on the building of Government offices, warships, aircraft, etc. For this reason it is customary to apply the inventory method to the valuation of Government and Local Corporation property, and to treat it as a separate item.

Salaries of Government and Corporation officials are not capitalised because their services, invaluable as they are, do not represent any real addition to the national wealth.

The imperfections of the statistical method of measurement will be seen from the fact that it is possible for a real increase of wealth from the national standpoint to be neglected. National savings devoted to educational purposes are omitted from the balance sheet, but if the same savings were applied to the building of working-class houses an increase of national wealth would be shown; and these instances can be readily multiplied.

The income-tax returns do not exhaust the national assets. The example of Government and Municipal Corporation property has already been referred to; and among other examples of this class may be mentioned such items as personal possessions that yield no income, and the stocks of commodities held by small shop-keepers below the income-tax limit. These assets can be valued only by the inventory method and the data available is far from ample.

There are other difficulties in addition to that of statistical measurement. Depreciation of means of production and other investments must be allowed for, or misleading results will follow, but the extent and the value of depreciation cannot be measured accurately. Another difficulty is that prices change from year to year, so that any comparative valuation of national wealth depends upon the year chosen as the starting point. If prices rise rapidly between the two years, the national wealth will appear to be increasing even if the output of production is declining. Conversely, if prices are falling, and the output of production is rising, the national wealth may appear to be declining when the amount of real wealth in the country is on the increase. Comparative measurement is also rendered difficult by the fact that new forms of wealth are

continually coming into being, either in the form of goods not produced at all at an earlier date, or in the form of new qualities of old goods.

3. National Income

A satisfactory definition of national income presents similar difficulties to that of national wealth. It might appear at first glance that the national income could be obtained by the simple process of taking the sum of individual incomes. The matter, however, is not quite so straightforward as that, for different people attach different meanings to the term national income.

Bowley and Stamp have defined the national income as the sum total of wages, salaries, profits, interest, rents of lands and buildings, including the case of owner occupiers, received within the year. The affinity with the statistical definition of national wealth is obvious. Only definite monetary payments for goods produced and services rendered within the year are recognised.

This rigid definition may be necessary for statistical measurement, but it is far from being a true estimate of real services. If I employ someone to decorate my house, the payment made is included in the national income, but if I perform the same service myself the addition is not shown. No account is taken of any gratuitous services, however necessary and valuable they may be in themselves.

Another difficulty in the way of satisfactorily defining national income is that the same service may be paid for at one time but not at another. Sir Josiah Stamp has raised this difficulty in approximately the following way. Suppose that 100 extra women enter industry at a wage of say £100 each per year, then the national income shows an addition of £10,000.

Now suppose that these 100 women are replaced by 100 wives; the wives enter industry at a wage of £100 per year each, while their domestic duties are performed by the

100 women formerly employed in industry, and at the same salary. On this hypothesis the national income will show an increase of £20,000, but the total amount of services rendered has remained constant.

Another point that merits attention is that double counting may easily occur. A business man with an income of £1,500 per annum may pay over £150 a year to his chauffeur. He is not allowed for purposes of income tax to deduct this £150 from his income, although it is counted as income by the chauffeur. This, however, for statistical purposes is quite valid, as a double service is performed.

The position, however, is not the same where taxes are laid on one class of people for the purpose of paying pensions to another class of people for past services. These sums, as before, appear as income in the pockets of both classes without any corresponding increase of current services; but we shall develop this point a little more fully in the next section.

NATIONAL INCOME IN 1928 AND IN 1933

Figures in millions of pounds

	1928	1933
Assessable Income	2317	1983
Wages, including Employers' insurance payments	1590	1483
Incomes below Income-Tax limits ..	222	229
Government Income, Post Office, etc. ..	23	19
Gross Income	4152	3714
Due to foreigners residing here	25	25
Internal National Debt Interest	278	212
Total Deduction	303	237
Net Income	3849	3477

4. Measurement of National Income

By far the most definite data for the measurement of national income are again the income-tax returns. From a careful analysis of these returns we can obtain the total incomes of individuals, companies and corporations that pay income tax. From the total thus obtained it is necessary to make additions to cover evasions of the tax, and the deductions necessary to transform legal into commercial profits.

Two numerous classes not included in the above returns are non-wage earners with incomes below the statutory limit and wage earners in a similar position.¹

The method adopted with respect to the first of these groups is to divide the individuals concerned into occupation groups and to assume for each group an average income within the limits of statistical probable error.² The incomes of teachers, Government and railway servants, bank clerks, and members of the Army and Navy can be calculated thus with a high degree of accuracy. The incomes of small farmers are taken as a percentage of the rental of their farms; while the incomes of shop assistants can be deduced from representative samples obtained from special inquiries.³

An additional allowance must be added to these totals to allow for income from property and other investments held by this class.

Information respecting the incomes of manual wage earners and domestic servants is much more difficult to obtain. The main source of information is still the Board

¹ The lowering of the exemption limit in 1931 has considerably reduced the numbers of these classes, though the reduction may not be permanent.

² For illustrations of the application of statistical method to these problems see the works of Bowley; and Jones: *A First Course in Statistics*.

³ For examples of such inquiries, and the methods of deducing the whole from a sample, see the works of Dr. Bowley and Jones.

of Trade inquiry into wages made in 1906. These wage rates can be corrected statistically by various devices and from information collected from different sources, so as to allow for subsequent changes. The numbers in each occupation can be obtained from the last census, and by the simple process of multiplication the sum total of wage earners' income can be extracted.

From the total of the income obtained by the above methods, additions and deductions may have to be made if the estimate is compiled for particular purposes. Part of the above income may accrue to persons resident abroad; on the other hand certain persons resident in this country may be in receipt of income derived from investments overseas and not included in the above total. It should also be noticed that the total of individual income is not the same as the total corporate income, as the latter includes undistributed profits.

A final point that must receive attention is what Bowley and Stamp call the social income, which they define as the total of individual and collective incomes, less incomes received by compulsory deductions from other incomes in return for past services not rendered during the current year.

The payment of interest on the National Debt is a typical case in point. Sums paid in income tax are not excluded from income; hence if we add up the total incomes of all individual taxpayers we shall include the interest on the National Debt twice, one before the Government collects the tax, and again when it has been paid over to the stockholders.

Instances of this kind are different in nature from the case of the business man and his chauffeur, so that in estimating the amount of the real social income, cases of mere redistribution of income must be omitted. If we do not do this we shall appear to grow richer with every increase of our National Debt, which is an obvious absurdity.

Another example of possible double counting is that of old age and war pensions. These are not payments for current services, but if we attempt to obtain the total of all individual incomes they must be included. In order, therefore, to arrive at the net social income, these cases must be deducted for the reason given above.

Lack of space has prevented more than a brief summary of these important but highly complex questions. If national wealth and income are to be measured arithmetically, they must be defined on a basis that is not wholly satisfactory.

- REFERENCES. Bowley: *Measurement of Social Phenomena*.
Bowley and Stamp: *The National Income*.
Carr-Saunders and Jones: *Social Structure
of England and Wales*.

CHAPTER XII

RENT OF LAND

1. Meaning of Distribution

In the next four chapters we shall examine what is usually known as the problems of distribution, that is, the division of the product of co-operative industry into rent of land, wages of labour, interest on capital, and profits. Indirectly, we have been considering these topics all along, because distribution takes place concurrently with production. In the next few chapters, however, we shall examine these questions more specifically and in some detail.

Distribution has really two aspects, functional and personal. The former is concerned with the division of the product of industry between the categories mentioned above; the latter with the division between actual persons. These two aspects are not quite identical, because any person may receive income from more than one source; for our present purpose, however, of explaining the nature of the forces that determine these incomes, the distinction makes little difference, because any personal income is simply the sum of various functional incomes.

It follows, therefore, that distribution is really the payments for the hire of factors of production, and that, in consequence, distribution cannot be considered apart from production. Further, most modern economists agree that the prices paid for these factors are only particular aspects of the general law of pricing. In a state of equilibrium each factor is rewarded according to its marginal productivity. It should be noticed, however, that the term productivity can be interpreted in two ways, physical

productivity and value productivity, but in an exchange society, it is value productivity with which the producer is mainly concerned.

In a primitive society where production is for direct use, physical and value productivity tend to coincide, for as soon as physical productivity began to exceed value productivity, the producer would direct part of his resources into some other channel. But in a specialised industrial society the case is different: physical and value productivities tend to move in opposite directions. It is value productivity that has economic significance for the individual.

2. Distribution Regulated Automatically

The National Dividend in any given year is the sum of all the different kinds of wealth produced by the agents of production in that year. This is divided among individuals as personal incomes: the miner, the manufacturer, or the statesman receives a money income which gives control over a certain share in the dividend. If all incomes were equal, the quotient obtained by dividing the dividend by the population would give the share of each person.

Incomes are not equal; the laws which govern income are so complicated that Economics does not attempt to solve the problem directly; it is easier to find the share allotted to the agents of production or, when dealing with a particular business, to the factors of production. A man's income may be derived from the payments he receives as owner of more than one factor: he may receive interest on money invested in the bank, rent for agricultural land he owns, profits in a business or shop which he owns and manages, and perhaps wages for spare-time work for an employer. Many incomes are thus composite, though others represent payment made to a person as owner or supplier of a single factor. When Economics has worked out an analysis on the basis of the reward to

factors of production, the more complicated problems of Distribution may be attempted.

Distribution is not carried out according to a concerted scheme: to a large extent it occurs naturally and automatically through the working of individual self-interest, though the State or private individuals may alter it to some extent. Value is the regulator. If each individual consumed the goods he produced, there would be no exchange, and thus no distribution, for each man's income would consist of those things he himself made or appropriated. In modern economy the wealth which a man controls is measured by his money income, and this is determined by the goods and services he gives out in the particular period. The amount of money he receives for his output will be roughly equal to the exchange value of the output, and the amount of goods he receives for the money income is similarly determined by exchange value; the money serves merely as an intermediary; the essence of the question is the exchange of the goods which a man has produced and does not personally need for other goods he requires; in a state of barter, exchange value would still be the regulator. Thus, if adjustment is perfect, the number and value of the goods a man obtains is determined by the number and value of the goods he produces.

3. Land Rent. Ricardo's Theory

Before expounding the Ricardian theory of land rent it may be necessary to remind the reader that the term rent can be used in several rather different senses. The hire price of any durable good—a house, or a piece of land—is termed its rent. The term rent may be also legitimately extended to the hire price of a machine, if no provision is made in the price for the repayment of capital, and where competition is free, and supply is equal to normal demand, these rents are necessary, or marginal payments.

But the term rent can be used in the sense of a surplus above costs, due either to the bounty of nature, or to the scarcity of a factor of production, and unless the distinction between rent as a marginal and necessary payment, and rent as a surplus above costs, is kept in mind, some confusion will result.

Modern ideas on land rent may be best approached through a study of the theory of Ricardo, who argued that rent is the reward paid for the use of the services of nature; unless expressly stated, this use of the term and not the common use must be understood. The ground has been cleared in the chapter on Land. The Ricardian theory of economic rent is there shown to be the surplus product raised on a given tract, in relation to land which only just repays cultivation; it thus assumes the existence of land which yields no surplus rent. Customary rent is rarely a pure rent: economic forces work slowly in agriculture, and exchange value is not the only cause which controls customary rents; they may be affected by ignorance, by philanthropy, by inertia, or else long leases may prevent customary rents from following fluctuations in value. Again, farmers' rent usually includes a payment for capital in some form, or for supervision and advice given by the owner. These facts sufficiently explain the great divergence of actual from economic rents.

"Rent is that portion of the produce of the earth which is paid to the landlord for the use of the original and indestructible powers of the soil. It is often, however, confounded with the interest and profit of capital, and, in popular language, the term is applied to whatever is annually paid by a farmer to his landlord" (Ricardo).

Briefly, Ricardo's theory may be expressed as follows:—

Suppose a landlord owns much land of varying fertility, all of it situated to equal advantage. Suppose a tenant *A* tills good land which produces 100 quarters of corn, while

B on a piece of poor land of equal area finds it only just worth while to apply the same amount of capital and labour, thus raising 20 quarters of corn. *B* would be as well off if he took over *A*'s land and paid 80 quarters for its use. Thus the landlord can force *A* to pay nearly 80 quarters as payment for the use of his land: if he refuses, he can dismiss him and allow *B* to farm the land; *B* will be prepared to pay this amount. If there are many farmers on the various tracts belonging to the landlord, those who till the fertile tracts can obtain no permanent advantage; farmers on poorer lands will offer to pay for the use of better land. If at any time one farmer is obtaining more net produce (after paying rent) than another farmer of equal ability applying the same amount of labour and capital, the landlord can squeeze more rent out of the first farmer, provided that the second is willing to continue working for his present net remuneration.

There will thus be a tendency to fix the rents of the various tracts at a level such that a farmer will obtain the same net remuneration on whichever land he works. If agricultural labour and capital were perfectly fluid, if self-interest were dominant, and if tenancy were terminable at will, actual rents would be fixed in this way; even as it is, actual rents tend, however roughly, to mirror the differences in fertility; a farmer will pay a high rent for good land as willingly as pay a high price for the best plough or the most highly-skilled labour.

It was necessary to Ricardo's theory that the term "fertility" be used in a wide and rather vague sense; the question of situation has been already discussed, but there are other complications. Farmers differ in ability and industry; further, their methods vary. A farmer who relied mainly on human labour would not place the same relative valuation on two farms as would another who made full use of labour-saving devices. Fertility also is relative

to the crop desired; soil suitable for wheat growing might not possess the same superiority for fruit.

Ricardo's theory assumes that no-rent land exists, *i.e.* that some land will only just repay cultivation, leaving no surplus for the landlord, and this part of his theory has been criticised a little unjustly. In the ordinary sense of hire price there may not be in this country any absolutely no-rent land, but there is plenty of land that can be let only at a nominal rent. In any case Ricardo was talking about land that only yielded sufficient produce to pay the necessary costs of production, including the minimum hire price which the farmer must pay for the land. Such land yielded no true economic rent; hence the term no-rent land.

In order to calculate the rent on a given piece of land, it is not necessary actually to find the no-rent land; if the land in question has been cultivated up to the margin of cultivation, the marginal return will be the same as that on the no-rent land. Suppose a farmer obtains a return of 20 units of corn to a dose of capital and labour on a bad tract, and that this just recompenses him; this will be the no-rent land. On better land, the return may be 100 units; 80 units of this (or more probably its money value) will be given up as rent, and it will pay the farmer to continue production until the working of diminishing return has pulled down the marginal output to 20 units. The total expenses on a piece of land are found by multiplying the number of doses applied by the marginal return; as no rent is yielded at the margin, this return is the same as the expense of applying each dose; these expenses are presumed to include normal remuneration for the work of the farmer. The total receipts will be the sum of a number of gradually decreasing quantities (units of corn), ranging from 100 to 20. The excess of the receipts over the expenses gives the rent the landlord can demand; the farmer would still work the land to the same limit were this rent obtained, for he has shown himself willing to work

for the remuneration he receives at the margin; if satisfied by the return to the last dose, he will, if necessary, work throughout at the same rate.

This may be summarised as follows:—

Return to dose on marginal land	..	20 units.
Return to marginal dose on good land	20	„
Return to given dose on good land	..	100 „
Surplus obtained for given dose	..	80 „

It is supposed that only one dose is applied to the marginal land.

Taking a dose of capital and labour to include actual expenses, and also normal remuneration to the farmer, the table may be rewritten:—

Net return to dose on marginal land	..	0 units.
„ „ „ marginal dose on good land	0	„
„ „ „ given dose on good land	..	80 „
Surplus obtained for given dose	.. ..	80 „

Fundamentally, all that the Ricardian theory of rent amounts to is the truism that the better article will always command the higher price. A more fertile acre will be worth more than a less fertile one simply because they are different things. The same truism applies to wages.

Wicksteed is very severe on Ricardo, but the belief that a special theory of land rent is unnecessary is held by economists who hold the English Classical School in great respect. Wicksell points out (*Lectures on Political Economy*, page 132) that rent and wages are almost parallel cases. Neglecting the question of capital for the present, nearly every form of production requires the services of both land and labour. The total contribution of either factor cannot be measured, because neither can be wholly dispensed with, but, as has already been pointed out in the general discussion

of margins, at the margin of cultivation, land and labour can replace each other. Only marginal land and labour can be said to function independently, and the contributions of these units to the total product determine not only their reward, but rent and wages in general.

4. Modern Theory of Rent

In the above exposition of Ricardo's theory, two facts stand out prominently: (i) rent appears as a differential quantity arising out of the differences in the fertility of land, including under that heading the advantages of position; (ii) the starting point is a no-rent margin. Ricardo might object with some show of justice that certain of his statements have been misinterpreted and exaggerated in the work of his successors. Still, the above two points have been usually associated with his theory during the nineteenth century.

Now the ultimate nature of rent is easily seen from the following simple illustration.

Suppose that the soil of England were of uniform quality; it does not matter in the least for our purpose whether the quality of the soil is good, bad, or indifferent, so long as it is uniform.

Let us suppose, further, that the geographical configuration of the land and the distribution of the population is such that no part of the country has any special advantages of position, and that imports of foreign corn are impossible. Under such assumptions, and, for the sake of greater simplicity, the additional assumptions that corn only is grown in England, and that the land is cultivated by the owners of the soil, although it is quite irrelevant to the argument who owns the land, so long as competition is possible, how would rent arise?

Now it is self-evident, on reflection, that until each acre of land was worked up to its optimum capacity, no question of rent could possibly arise, because, until that point was

reached, the supply of corn would be always adequate to the demand, unless every landowner acted in combination, a contingency which is extremely unlikely. Let us suppose, however, that an attempt were made by some combination of landowners to artificially restrict the supply of products in order to gain a surplus above expenses of production through a rise in price. What would happen? Clearly some land would have to go out of cultivation, or the whole land controlled by the combination would have to be worked less intensively.

But so long as any competition existed at all, the higher price of corn due to the reduced supply would prove too strong an inducement for the owners of the unused land, or for some of those who had reduced the intensity of their cultivation, not to compete in the supply. The final result would be that the supply would return to its former level, and the temporary rent would disappear.

Rent, then, can only exist as a permanent phenomenon when the demand for a particular crop is greater than the available supply, assuming, as we have done, that imports are impossible. In such a case, if the population continued to increase in a greater ratio than the effects of technical progress on supplies, it is likely that rent would gradually rise until it had absorbed all the surplus in excess of the minimum wages of subsistence and the minimum of payments necessary to call into being other productive means and efforts, if the social system remained constant.

Up to this point, in a certain sense, we have not greatly diverged from Ricardo, except at one point. Ricardo stressed the importance of the relative scarcity of good land, but, as we have shown above, the essential factor in rent is the relative scarcity of the product, and it is a matter of indifference to the general principle whether the land is uniformly good, uniformly bad, or gradable.

The existence of less fertile lands has only a secondary effect on rent. If in our illustration we had assumed all

the soil of England to have been of a uniformly inferior quality, rent would have emerged sooner for the simple and sufficient reason that the supply of the product would have been naturally smaller.

Where land is far from uniform in quality the effect of the presence of inferior lands can be considered from two hypothetical points of view. Viewed from one angle, we can say that the existence of inferior lands tends to increase the amount of rent because the supply of the product is less than it would have been had all the land been of the best quality. On the other hand, we can say logically that, if the inferior lands were not used, and production were confined to the fertile lands, rent would be greater than if use had been made of these poorer soils, because they add something to the supply. In a certain sense, then, the presence of inferior lands tends to act as a brake on the rise of rent.

This may appear a little fanciful to the reader, but we have extended the argument thus far to emphasise the fundamental fact that land rent is primarily a function of the supply of the products of land; the fertility of the soil enters the question in a secondary sense only. And the matter is not one of mere "logic-chopping" only, as might appear from a superficial glance. So long as it was thought that rent was due solely to the natural differences in the fertility of soils, it was easy to believe that land rent was a special phenomenon and in some way different from the rewards earned by the other factors of production. Once, however, it is grasped that land rent is simply due to a relative scarcity of products, all reason for placing it in a special category disappears.

The economic significance of the difference between rich and poor land is that a given crop can be raised at less cost of capital and labour on rich than on poor land. When the demand price for corn is low, only the best land will be worked. As the demand price for any specific

product rises because of its growing relative scarcity, rent will tend to increase; but when the demand price has reached a certain height it becomes profitable to cultivate inferior soils, the products of which compete on the market with those of the better lands, and in this way the rise in prices and rents is checked.

This way of looking at the significance of inferior lands, so diametrically opposite to that of the Ricardian school, follows naturally from the fact that modern theory attacks the problem from a different starting-point, that is to say, from the relative scarcity of the products independently of any peculiarity inherent in the land itself.

5. Diminishing Returns and Land Rent

The relation between diminishing returns and rent should be clear from what has been said in the previous section. If England were a closed country with a growing population, and all its soil of even the highest grade of fertility, beyond a certain point, further intensive cultivation would yield less than a proportional increase in the output of products. A relative scarcity of products would begin and their demand price would rise above their cost of production. The tendency of all land to diminishing returns places a natural limit on the supply of products and causes rent. This tendency is disguised, and to some extent offset when the products of land can be imported from all over the world, but the general principle remains intact. If we grasp clearly that a relative scarcity of products will cause their price to rise above their costs of production, it is easily seen that the rent principle extends to all forms of production. Rent is not peculiar to land.

6. The Rent Margin

Whether from the point of view of a specific crop, say, corn, there is a perfectly rentless margin or not, has long been a disputed question. In a fully developed country

there is probably no land that cannot be put to some profitable use, but in the case of a particular crop, say corn, it is highly probable that in every country there is some rentless land under normal conditions. This qualification is necessary, because, as we have noted elsewhere, the margin is not a fixed and independent point. It rises and falls with changes in demand price in relation to changes in the degrees of scarcity of the product.

In any case, however, the margin is the addition or subtraction of an increment to, or from, the existing supply of units qualitatively equal and interchangeable. Ricardo's margin, on the other hand, was the lowest grade of land in use, and rent was measured from this point.

But, as we have noted elsewhere, this is not an ultimate explanation of the margin. It is true that during both the French Revolution, and the recent world War, land was cultivated that would not normally have been used in the production of corn, and in consequence, when prices returned to the normal, this land was driven out of the corn supply. This, however, is a purely accidental circumstance, and not a universally necessary fact. All land has alternative uses, and where any relative scarcity of land exists, when corn prices fall below a certain point it becomes more profitable to put portions of a land area to one of these alternative uses. The number of these alternative uses for land is very large. In addition to the large variety of crops and pastures, land can be used for afforestation, for game preserves, and it can be enclosed as parks around country residences.

Now it does not follow that, when it is necessary to decrease the corn supply, the poorest land from this point of view will be the first to embrace an alternative use. It may so happen in numerous cases, but it cannot be laid down as a universal principle. It is just as likely that land high up in the scale of fertility may be able to take advantage of some alternative employment before the land

that is just worth while cultivating for corn can do so. This possibility was noted in our discussion over the marginal firm, and, while land and the business unit are scarcely identical in capacity for taking advantage of alternative openings, the same principle holds good to some extent. The theory of a no-rent margin, and a series of differential rents erected upon it, while true in particular cases, is a partial, not an ultimate, explanation, and does not reach the foundation of the problem.

This is not to deny that differential rents do exist. In every phase of life the better article or service will command a higher price as compared with an inferior one; differential payments are not peculiar to land; but they do not explain the ultimate nature of rent, or the margin. The ultimate nature of the margin is not qualitative but quantitative, a function of the changes in the relative scarcity of the supply. The ultimate nature of rent is not differential payments, but high prices due to the scarcity of the supply of products of land relative to the demand. In other words the differential principle only explains why one acre of land commands a higher rent than a less fertile one; it does not explain the phenomenon of rent.

Many of the misconceptions which have grown up around the problem of land rent have been caused by the traditional diagrammatic representation. The same diagram serves to illustrate rent due to intensive cultivation, and rent due to extensive cultivation. Consider the latter aspect first.

Units of land are arranged in order of descending fertility along the axis of X . A is a unit of land of the highest fertility; Z is an equal unit of land of such low efficiency that the crop just repays the expenses of cultivation and leaves no surplus for rent. The area between the curve and the line ab thus appears to measure a surplus which is not exhausted by the marginal payments made to all the factors required to produce the product. But when we arrange units of land in a descending order like this, we

are comparing totally different things, and to assert that *A* will command a price three times as high as *Z* because it is three times as productive is to state an obvious truism in no way peculiar to land. It is necessary to bring forward this point because the apparent surplus over the Ricardian margin has appeared to many people inconsistent with the marginal theory of distribution; for if a surplus exists when the factors have been marginally remunerated, then, clearly, marginal distribution breaks down.

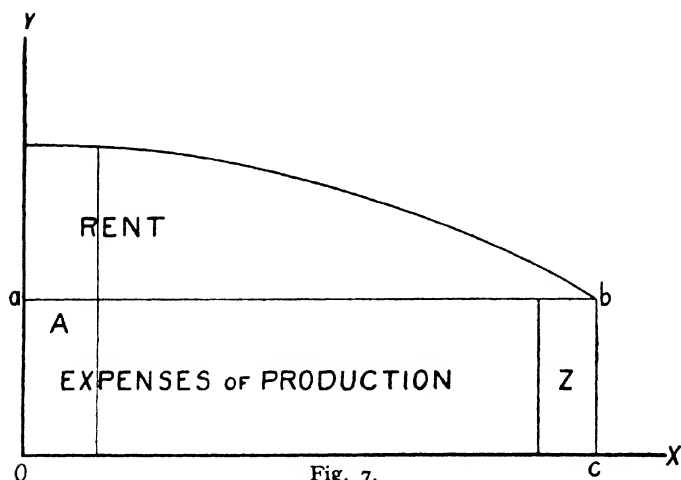


Fig. 7.

If, however, the units of land *A* . . . *Z* are dissimilar things there seems no theoretical reason why we should not regard each of them as marginal to their own particular class. In that case the supposed surplus disappears.

Now let us consider the diagram as an illustration of rent arising from intensive cultivation of a given area of land. This time *A* . . . *Z* measured along the *X* axis represent increments of labour applied to a constant of land. Under the term labour is included all the instruments necessary

to raise the crop, except land. The rates of increase to the crop, as each additional increment of labour is applied to the land, are measured along the axis Y and are bounded by the curve.

Once again, rent appears as a mixtilinear area between the curve and the line ab and wages or costs as the rectangular area $abco$, but this time it should be noticed that this is simply because we have taken land to be a constant, and wages to be a variable, factor. This, however, is a purely arbitrary arrangement. Had we shown on the diagram a variable quantity of land applied to a constant of labour, the divisions of the diagram would have been reversed, rent appearing as a rectangular area.

It is very necessary to grasp this important point very clearly, because it follows that if the rewards to land and labour (including capital) can be represented at will by either a curved or a rectangular diagram, then it is clear that, as a distributive share, the two are the same quantity and can be determined marginally in the sense in which the term margin has been used throughout this book, that is to say, as a slight increase or decrease in the number of qualitatively equal units considered in reference to the whole supply.

The reader may now perceive that this point has been laboured so frequently because it is necessary to a marginal theory of distribution. The fact that the mixtilinear area can be reduced to a rectangle means that marginal payments exhaust the product in the equilibrium state, and, under such conditions, that it is more theoretically correct to regard the curved portion of the diagram as a marginal payment than as a surplus.¹

¹ The theorem is rigidly true only when competition is perfect, and when each competitor operates on only a small part of the market. Under actual dynamic conditions, certain people succeed in appropriating a greater distributive share of the product than their marginal efficiency justifies. We shall return to this point again in the chapter on Profits.

The reader may find several points of difficulty here, because this matter can be approached from different points of view. The argument that the rent of marginal land is governed by alternative uses assumes that there are no unused reserves of land. In a fully settled country such as England, this is roughly true, but the case is not quite the same in sparsely-populated countries. Where the land supply is in superabundance, the amount required for any particular use can be increased without encroaching on any existing use.

In such cases the marginal land is probably no-rent land. Another point to notice is that in sparsely-peopled countries the bulk of the land tends to be used for the production of one crop only; where this is the case it is reasonable to suppose that the marginal land is the least efficient and that it is the last to come in and the first to leave the supply with changes in price. Under these conditions land is what Wieser calls a specific means of production and distinct from cost means which can be used in a large range of alternative lines of production. Wieser argues that specific and cost means are remunerated on different principles, and that specific means take the surplus left when the cost means have been paid. He thus looks at the matter from much the same standpoint as Ricardo.

In Ricardo's time land was the most striking specific good: indeed it has often been objected that Ricardo's theory was not so much a theory of agricultural land rent in general as a theory of corn rent; but it is clear that in a country like England land has lost its specific character to a great extent, and although it may be more specific than capital and labour the difference is not sufficiently great to justify a special theory of rent.

In the very long run, land in countries which at the present time are very thinly settled and which has a highly specific character must tend to approach the

condition of land in England, so that rent everywhere becomes less a surplus and more a necessary payment to keep a piece of land in a certain supply.

7. Land Rent and Price

Whether rent is a cause of price or price a cause of rent is an old and vexed controversy. It was necessary to the Ricardian labour theory that rent should be an effect, not a cause, of price, for if elements other than labour costs entered into prices, a pure labour theory of values was logically impossible; and on the Ricardian conception of the margin this view of rent was not difficult to prove.

Starting from the theory of a no-rent margin at which the selling price of the product was just sufficient to remunerate the capital and labour employed on it at current rates, and also from the fact that in a competitive society there can be only one price for the same commodity on the same market at any one time, the rest was easy. The marginal product was just sufficient to equilibrate demand and supply; hence the supply price of the marginal unit fixed the unit supply price of the whole stock offered on the market. Rent, being a differential payment due to the lower expenses of producing a unit of output on lands above the margin, could exert no determining effect on prices. The supply price was fixed at the margin of cultivation, but this point was no-rent land; hence rent was excluded from the causes determining prices. The way to a pure labour theory of value was thus opened.

Now it is true that the differential aspect of rent is not a cause of price. If land *A* obtains a higher rent than land *B* because it renders a more valuable service, this differential payment has no effect on price. As a matter of fact, in this case we are really considering two dissimilar things. The unsatisfactory nature of the differential principle as an ultimate explanation of rent is apparent

from the fact that, by a suitable modification of the diagram and the argument, it can be proved that wages and interest do not enter price.¹

The weakness in the proposition is that the differential and no-rent margin theories are only partial explanations. As we have already noticed, in a civilised and developed community, all land has alternative uses, and when land is relatively scarce, or, more accurately, when the products of land are relatively scarce, the influence of these alternative uses cannot be neglected. If the demand for corn, for example, is such that it necessitates bringing into the corn supply land that has been previously devoted to some other purpose, the loss of this alternative use must be paid for, and this scarcity rent does affect price.

Land may be no-rent land from the point of view of the production of corn, but if it were not used for producing corn it would be applied to the production of some other crop, or to pasture, afforestation, game preserving, etc.; hence to bring it into, and to retain it in, the corn supply, a rent at least equal to the most valuable of these alternative uses must be paid for it. If for any reason the value of this foregone use rises, so must the scarcity rent necessary to retain the land in question in the corn supply, if the conditions of supply and demand for that commodity remain constant. That the rents paid for the loss of these foregone alternatives are price-determining is self-evident because if all other alternative uses of land were eliminated, marginal land would be less expensive to hire. This marginal land, as we have already seen, is not necessarily low-grade land; it is easily possible to conceive of circumstances in which land, which is better land for wheat growing than the poorest land originally in the wheat supply, is attracted away from the production of, say, sugar beet or barley, and drawn into the wheat supply.

¹ An example will be found worked out in Hobson: *Economics of Distribution*.

But there is another way of approaching the problem. All prices are determined by the scarcity of the products in relation to the demand for them. From the point of view of the entrepreneur, the rent that he pays for his land is part of his expenses of production. It follows, therefore, that his rent, whatever the elements of its composition, will decide both the quantity of land that he hires and the uses to which it will be put. If he uses it for one purpose the supply of another product is necessarily depleted; but the relative scarcity of the supply affects price; therefore as the rent paid has an influence on the supply, rent must exercise some indirect influence on price.

Incidentally it should be noticed that if the hire price of land is dear because of the high relative scarcity of land, marginal substitution will be encouraged, but to what extent this will take place will depend on the relative scarcity of these other factors. If the supply of these factors is very elastic a high degree of substitution will take place.

It should, however, be carefully noted that the argument above that rent is a cause of price relates to immediate facts only. Davenport rightly points out that in the last analysis, rent is neither price determined nor price determining. Both price and rent are governed by the relative scarcity of the products of land, and vary with changes in that relative scarcity. When we say that the price of a certain product is high because it is grown on land that yields a high rent because it is demanded for alternative uses, our statement really means that prices would be lower if land were less relatively scarce, as in that case the supply of one crop could be increased without restricting that of another.

It is sometimes argued that the remission of rents by the landlords would not affect prices, the argument being supported, of course, by the theory of Ricardo. But in this case the rent is not annihilated, it is merely transferred to the farmers. Of course, if no one consented to receive rent

at all, agricultural products could be sold more cheaply, but so could any other commodity if the producers refused to accept profits.

To put the matter in this way, however, is to overlook the significance of the pricing process. The prices of any commodity and, more ultimately, the prices of the factors by which the commodity is produced are what they are according to the relative scarcity of the factors in question. Even in a socialist state, unless the factors were directly rationed, rent would be necessary as a means of restricting land to the uses most socially necessary. For in any society where freedom of choice is allowed, rent decides how a piece of land shall be used just as the use of any other productive factor is fixed by its price. Any landlord can put his land to one of several alternative uses. If he allows it to be used for one purpose it is lost to another. It is sometimes said, therefore, that rent is a compensation to the landlord for real costs incurred by him.

Opinions still differ on the subject of rent and price, and some economists prefer to regard rent as the price determined return to a specific factor fixed in supply. In most cases, however, in the long run, land tends to lose its specific character and to become what Wieser calls a cost means of production. If we look on the surface only, and without probing too deeply, we may say where land is demanded for one purpose only that rent is price determined, and where alternative uses compete for a supply of land that, indirectly, rent affects price because the fact that it must be paid tends to affect the supply of particular products.

8. The Effects of Land Improvements on Agricultural Rents

On the Ricardian rent theory it would appear that improvements confined to the richer soils would increase rents by widening the differential advantages of the good

lands over the worst soils in cultivation, and that, conversely, improvements confined to marginal lands would diminish rents.

Now it is perfectly true that on the first hypothesis the richer lands would yield relatively more rent in comparison with the "so-called" marginal lands, because they would have become relatively more productive. But if we take rent as a whole, it is clear that improvements which make any grade of land more productive, must, by reducing the relative scarcity of the products, diminish rent. Prices would fall, and so would rents, whether considered as price-determining or price-determined. From the point of view that rents are high because prices are high, a fall in price must involve a fall in rent. On the other hand, from the point of view that prices are high because rents are high, the fall in price could be explained as due to the fact that the greater productivity of the land had lessened its relative scarcity, and in turn its rent.

Improvements to either rich or poor soils would have the same significance for rent, though not necessarily in the same proportion, as the effects on productivity of the land would be probably greater in the one case than in the other.

9. Urban Ground Rents

So far, we have considered rent in relation to agricultural land only, but the phenomenon exists also with respect to urban building sites and premises. It has been shown that situation may be as important as simple fertility in respect to differential rents, and that the same laws of rent hold for situation as for fertility. In the case of business premises, situation is the most important direct factor, while fertility has an indirect influence. Consider a growing town. A business requires a little land for buildings, etc. This land, if cheapness is essential, must be agricultural or pastoral. A plot of land may have certain situational advantages, *e.g.* nearness to a station. If there

is keen competition for it, the rent obtained will be much higher than it is for a plot which is just worth using, *i.e.* a differential rent will appear. When a number of premises are built there will be a marginal ground site, bearing no differential rent; it will, however, bear a scarcity rent, not less than the best rent otherwise obtainable. If there is abundant land of the kind required in the right situation, the marginal ground site may be obtained for a little over agricultural rent; if even the least favourable ground sites are small in number a high scarcity rent will be exacted.

Some firms obtain land very cheaply alongside railway main lines: the situation may be excellent, but there is so much agricultural land along main lines that the competition of landlords sends down the rent to the agricultural value. In a London suburb, however, there is little land available for agriculture, and what there is obtains a high situational differential rent: thus the marginal ground site obtains a high scarcity rent.

In the above instances the differential aspect of rent is specially prominent. Where the amount of land required for building is small relative to the area of a district, the differential rent exacted for building sites is very high compared with the rent paid for agricultural land, simply because the service rendered by a small area in the one case is much more valuable than in the other.

If we regard the whole of a district as in the potential building supply, we can classify the land inconveniently situated for building purposes as marginal land, as is often done. In such a case, as the agricultural site value is negligible in comparison with that of building plots, we might regard the agricultural use as a no-rent margin, and the building site values as a pure differential rent. This is scarcely legitimate, however, as neither agriculture nor building premises can be accurately described as competing alternative uses for the land. Again, use is made of that

misleading notion of the nature of the margin that has been repeatedly condemned.

The problems of ground rent become more important as we approach the centre of a large town. There, both the absolute and relative scarcity of ground space is beyond dispute, and also the effect of alternative uses is most clearly seen.

Ground rents in the city of London and in some of the fashionable shopping thoroughfares are almost infinitely high compared with what they would have been had these sites still been used for agricultural products. Land that two centuries ago was given over to pasture or the plough has had built upon it, in succession, dwelling-houses, shops, blocks of offices or fashionable stores, and with each successive use the ground rent has increased progressively.

Now we could, of course, regard each successive advance of rent as differential payment for a higher over a lower use, or, to make the instances co-exist in time, we could say that the excess site rent charged for a fashionable shop or hotel, over that commanded by the same superficial area occupied by small shops in the same street, is a differential rent; but as we saw in the case of agricultural land of different degrees of fertility, this is not the ultimate explanation of rent.

High ground rent in the centre of London, or in any other large city is caused by absolute scarcity of land on the one hand, and on the other hand by the relative scarcity of land with respect to any specific use, owing to the intensity of the competing demands of other uses.

A certain plot of land may be occupied by a large private house. If it were in a fashionable quarter it would command a high absolute scarcity rent because the demand for such houses would be greatly in excess of the supply.¹ But

¹ This was a universal experience with respect to dwelling-house values in the immediate post-war years. It did not affect existing ground rents simply because the sites were held on lease.

suppose that this site became attractive for alternative purposes—a shop, hotel, offices, or a tube station—a rent at least equal to the most valuable of these competing uses must be paid to retain the site in the dwelling-house supply. This argument would apply only in the case of freehold land. Where the land is held on lease, changes are likely to take place at intervals only, but the general principle applies equally to both cases. Absolute, as well as relative, scarcity of land leads to an economical use of ground sites at the centre of large towns. A building is divided into offices or chambers which are extremely small. Again, within limits, it is much more economical to build upwards on a given site than to spread outwards; the inconvenience and expense (*e.g.* lifts) of high buildings are less than the expense of a new ground site. This process reaches its culminating point in the New York skyscrapers.

10. Building Rents

Rent as applied to houses contains two elements. Ground rent is an element in house rent, and so far the latter is ruled by principles formulated above. The ground rent and the payment for the use of the buildings erected on the site may be kept distinct. Usually the site is bought outright by the owner of the buildings; he will pay a price to the landlord estimated as the capitalised ground rent, *i.e.* a sum of money which is worth as much to the landlord as the sum of all the prospective ground rents.

The building rent is fixed in the same way as the price of a manufactured commodity, *e.g.* machinery, which is durable. The owner will require bank interest on the cost of the building; he will seek payment for risk—if he is a speculative builder he may mistake the demand, and may not be able to let the house; he will require payment for repairs and improvements, as well as compensation for gradual depreciation; in addition, he will require an extra payment as remuneration for his trouble and enterprise;

were this not expected, he would not have built the house. If he sells the house outright he will require a sum equal to the estimated capitalised value of the ground rent plus the building rent.

Once the house is built, however, the cost of building will have no direct influence on its rent: rents will be fixed by the relation of demand to existing supply except in those infrequent cases where a large number of houses are being built or destroyed. The supply of some articles, *e.g.* fish, is so capricious that the market is alternately flooded and emptied within a few days; houses are built slowly and are durable, so that their supply cannot be suddenly increased; except in rare cases, *e.g.* the deliberate planning of a garden city, the number of new houses is very small compared with the total number of satisfactory houses already in use. To a man in search of a house the total actual rent is the determining factor, including both site and building rent; if all the houses are equally desirable, marginal utility will influence price as in the case of other commodities.

It follows from what has been said above why a house, even under free competition, usually sells for more than its costs of production. The cost of a kettle is relatively negligible; its supply can thus be expanded immediately to equate with an increase in demand. Houses, however, are costly to produce; their supply tends always to lag behind demand; builders can therefore exact an economic rent, more or less large according to circumstances.

11. Quasi-Rent

Marshall introduced a distinction between land rent and the similar surplus accruing to the other instruments of production. The difference, he argued, lies in the fact that whereas the supply of land is practically fixed and is a direct gift of Nature, that of houses can be increased slowly, as it is dependent on human production. A

differential advantage obtained by an article over another article of the same kind when supply can be increased (or decreased) slowly is called a Quasi-rent [Marshall].

The following example will serve to illustrate the point. Suppose a speculative builder erects a few villas in a village which contains a few men who have made money: they may be eagerly taken up and will obtain much higher rents than the normal. Profits on the building of such houses will be abnormally high; these new houses will obtain a differential advantage over those older ones which just pay for cost, while the worst houses would now be considered to bear a negative quasi-rent. If the builder, through labour troubles, through absence of other well-to-do people, or for some other reason hesitates to build more houses, the quasi-rent of the new houses may persist; if, however, he or a rival tries to repeat the success, the marginal utility of the new villas will fall; it may fall so much that the quasi-rent compared with houses which just repay construction will fall to zero; it may even become negative, though the quasi-rent compared with the worst house will remain positive. A quasi-rent can slowly disappear through further construction; a negative quasi-rent would also disappear through destruction of the worst houses.

The supposed importance of the notion of quasi-rent lies in the fact that it is found to emerge throughout economic experience: the whole theory of distribution could be worked out from the notions of scarcity rent and differential rent, though it is often convenient to employ other methods. A manufacturer may obtain high profits by means of a patent or secret process, but if the patent lapses or the secret is discovered the advantage disappears; while it exists, it is a quasi-rent. A skilled cricketer, musician, or mechanic may possess a genius in certain directions which is the source of a quasi-rent, for the advantage will persist until successful rivals appear.

Quasi-rent is not a hard and fast conception: from one standpoint a doctor's earnings may be normal profit, while from another they may contain quasi-rent. Time is the determining factor: if a student is planning out his future, the chance of great gain will be part of the attraction into the profession, and will thus influence the supply of doctors; but once he is in the profession his income in any year will contain an element of quasi-rent; it is determined by conditions of demand for and supply of doctors; the supply of doctors can be changed only very slowly. For short periods, quasi-rent is obtained because extent of demand necessitates the employment of inferior doctors, and such quasi-rent may not affect the cost of attendance; for short periods, quasi-rent thus arises. For long periods, however, during which the supply of doctors may be sensibly changed, expectation of excess gains influences the supply of doctors and thus affects their future remuneration.

It follows from what has been said above that quasi-rents can be abolished by replacing the obsolete factors in any supply with more efficient ones without waiting for their elimination by natural causes. Such procedure would mean the destruction of capital—in some cases, useful capital. The question therefore arises, is machine and method scrapping an economic waste? It is true that when there is a great shortage of capital such a policy may have serious disadvantages, but when capital is relatively abundant it is economic waste not to employ the best methods made available by technical progress.

It will be noticed that Marshall's distinction rests upon a supposed fundamental difference between land and other forms of matter, but, as was shown in Chapter IV.¹, there is no reason to suppose that land is limited in any way

¹ See also Cannan : *Economist's Protest*. Carver: *Distribution of Wealth*, takes a middle course.

different from other matter. At certain times and places it is no doubt easier to increase the supply of other productive forces than in the case of land as a productive force. The converse, however, is equally true; and in any event the difference between land and other instruments of production is one of degree only, and not a fundamental difference of kind. Once this distinction is removed the necessity for artificial categories of rent disappears. In all classes of productive instruments, rent arises, increases, and diminishes, on identical principles. Land rent, it is true, has a greater degree of permanency, and it is only from this point of view that any economic distinction is justified.

12. Farm Rents

Actual farm rents consist of economic rent together with other elements already mentioned: the rent for buildings is governed by the same causes as that of houses; the payment for use of stock, where such payment is customary, is dependent on the market value of the stock. It must always be remembered that custom plays a larger part in agriculture than in business: a customary rent may be very different from the rent which would have been reached by keen competition.

Economic analysis shows that rent is a real thing and must emerge wherever there is a limitation in the supply of products of land, provided the price continues to be fixed by the play of supply and demand, and the law of diminishing return continues to operate. We have regarded land broadly, as an agent of production; the primary economic problem has been solved. The human interest has only begun; the individual wishes to know what portion of this huge surplus on the Ricardian theory will fall to him personally; assuming perfect competition and self-interest, the whole will be obtained by the landlord.

In actual practice the landlord obtains a very large proportion.¹ This fact has led to violent criticism of the whole system. Rent, as the critics point out, is largely, almost exclusively, a social product.² Broadly speaking, it emerges as a result of the increased competition for land as population increases; the landlord has done nothing to earn this surplus, though his social usefulness in other directions may be very marked. The tenant may in favourable cases obtain some of the surplus, but in any case a large landowner in a country whose population is growing rapidly can obtain large rents as a result of the increased difficulty of obtaining food. Ground rents are a still more glaring example, and huge fortunes have been made by landlords who have simply held on to land which, through its favourable position in a large town, has immensely increased in value.

13. Effects of Ground Rents on Prices

The previous discussion had reference to agricultural rents, and for the sake of completeness a few words are necessary with respect to the ground rents of urban sites. There is no fundamental difference between the two cases, but as in the centre of large towns there is an absolute scarcity of suitable business sites the question assumes greater importance.

The question, Are high ground rents of city shops a cause or an effect of high prices? is a more complicated one than that of agricultural rents, because the products of agriculture are relatively simple compared with the almost infinite

¹ On the theory explained elsewhere the Ricardian surplus is really a marginal payment under equilibrium conditions. This assumes theoretically perfect competition, which is not realised in practice with respect to English land.

² But the same argument holds with respect to all products and factors. The force of the argument rested on the belief that land is in some way different from all other factors of production. Economically considered, this is incorrect, though from a political and social point of view the case may be, and probably is, different.

variety of grades of the same commodity offered for sale in a city shopping area.

A high ground rent may coincide with high selling prices simply because the customers of this particular shop have ample resources and are prepared to pay fancy prices. In some cases, no doubt, the difference can be explained by the fact that the article offered is of better quality, but in many cases a certain commodity is sold at a much higher price in one shop than it would realise in another locality; and this is true whether a high or a low rent is charged for the ground and the premises.

A more usual case is at the other extreme, where high rent is correlated with very low prices. It is a fact of experience that many goods can be purchased more cheaply in highly-rented city shops than in the suburbs. Woolworth's shops are usually built on sites that command a high rental.

The reason for these low prices is the quick sales and the enormous volume of business done. The total net profits may be even greater than if a smaller volume of business were transacted in higher-priced articles.

Now it cannot be argued that high rent is a cause of high prices here, because high prices are non-existent. The high rent is paid simply because profits are high, and we might be tempted to say that rent is purely an effect of the expectation of profits, and in many instances that is the case. Davenport, however, argues that this is only a partial explanation. The high rent must be deducted from gross earnings to arrive at net profits; rent therefore affects profits, and must indirectly affect prices through acting on the supply of articles of a particular grade offered for sale. Ultimately, in the case of most city shopping premises, site or position values exercise an indirect influence on prices.¹

¹ For a complete discussion of this matter see Davenport: *Economics of Enterprise*.

14. “ Unearned Increment ”

The “ unearned increment ” of land has been a familiar term since the days of Ricardo, but it became very prominent after 1880 with the publication of Henry George's *Progress and Poverty*.

The theory that land furnishes an increment of value unearned in a special sense as not being due to human efforts is as old as the Physiocrats and Adam Smith, by whom land rent in the form of real produce was attributed to the bounty of nature. Ricardo moved the argument to the scarcity of fertile land, but according to the views of all the early thinkers land rent was either a natural or social product, and throughout the nineteenth century the belief gradually developed in intensity that what was created by natural or social forces should be appropriated by the State for the benefit of the people.

In a dynamic society it is obviously true that any land monopolist is in a position to exact scarcity profits, though what applies to the landlord is equally applicable to the owners of other factors. But what made hostility to the landlords so marked was the extraordinary rise of rents around the centres of the large industrial cities during the nineteenth century. Land scarcity touched the public imagination to a much greater degree than other forms of scarcity as the landlord appeared to reap where he had not sown, and doubtless the feeling has never been altogether absent that land should not have been allowed to become wholly private property. For these and other reasons, doubtless political, private property in land has been attacked by the Spencean socialists at the beginning of the nineteenth century, by Henry George in *Progress and Poverty*, by Joseph Chamberlain in the *Unauthorised Programme*, and more recently in the early speeches of Mr. Lloyd George.

That social forces may increase enormously the value of certain lands is a commonplace of experience; the wisdom

of attempts to allot it to its proper owners is not so apparent. Henry George and his followers have favoured the "single tax." They argue that as economic rent is a social phenomenon it should not be appropriated by individuals, but should pass into the hands of the State. Hence they advocate the taxation of land to such an extent that the surplus should be taken away, leaving only normal profits to the cultivator. They believe that such taxation is just, and that it would avoid the necessity of other forms of taxation.

There seems to be no serious injustice in deciding that any future appreciation in the value of property caused by social changes should benefit the whole population rather than the owner; there are, however, serious practical difficulties to be faced. The English landlord is not a sleeping partner: he may have spent much capital in improving his land, and it is impossible to discriminate exactly what proportion is unearned increment and what due to application of labour and capital. The tenant may also have improved the soil, and it seems fairer that the landlord should indemnify him at the expiration of the lease and recoup himself by an increased rent than that the State should obtain the increase.

Again, if the State takes an increase in value imputed to social action, it seems only just that it should guarantee a landowner against a fall in rents due to a migration of population or for similar reasons; property often falls in value because the district is no longer fashionable or because trade has moved to other towns; there is little likelihood of any State thus guaranteeing rents except in abnormal times.

Further, it does not seem just to single out land rents as the one source of taxation: all values are affected by social occurrences, and the existence of an unearned surplus can be paralleled; thus a man may make abnormal profits

or wages or interest because he is in an especially favourable position.

It should be noted, however, that the classical conception of rent as unearned income has been criticised in recent economic theory. An income entailing no expense is not the same thing as a costless income. When a landowner allows his land to be used for one purpose, he does so by the sacrifice of some other alternative use. Whenever the economic system approaches equilibrium unearned income disappears and incomes, like prices, become the result of a balancing of advantages gained, and advantages relinquished.

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CHAPTER XIII

WAGES

1. Introduction

Theories of wages have always presented difficulties because of the human element involved. Because of the eternal conflict between what is and what we inwardly feel should be, attempts have always been made to emphasise the special peculiarities of labour as opposed to land and capital.

We stated in a previous chapter that there seems no reason for ascribing any special peculiarities to labour from the point of view of economic significance. To the entrepreneur undertaking the business of production, labour is a set of resources like capital and land, that is, a means to an end.

This fact has aroused very bitter opposition from all those interested in the moral and material welfare of the working classes, for the very good reason that although from the economic point of view the labourer is a means, he is also a human being, and in consequence an end in himself.

But with this aspect of the labourer we are not here concerned. Our purpose is to ascertain the law according to which the labourer is remunerated. We shall have in mind the actual existing competitive society, but the fundamental principles of Economics are applicable to any form of society, at any rate where means of satisfaction are scarce in relation to ends.

As Wicksteed remarks, the market for wages, with certain limitations, is only a particular aspect of the general market for commodities; but before applying the

marginal analysis to this particular problem we shall consider briefly two earlier theories of wages that were widely accepted between 1760 and 1860.

2. Subsistence Theory of Wages

In the France of the eighteenth century the peasantry were in a condition hardly removed from slavery: they were worked hard for a bare living, and any surplus over necessities was taken for the State, privileged classes being exempt from taxation. If the people became more comfortable the checks to population were removed, and increased numbers shared the former misery. Wages were just sufficient to keep in being a class of workers who were used by the nobles just as were the Roman slaves by their owners; wages were kept down at subsistence level.

Thus the Physiocrats believed that there was a kind of law of wages, that if the peasantry obtained more than a bare living the increase of population would again drag down the standard, even if the surplus were not taken by taxation. Ricardo saw intense misery in this country, but the condition of the population was not so hopeless as in France before the Revolution; he modified the conclusions of the Physiocrats. The German socialists mistakenly supposed that Ricardo gave his authority to a law of wages as hopeless as that of the Physiocrats; thus they formulated the iron law (Lassalle) or brazen law. They believed that under a capitalistic system, in which supply and demand were the factors that fixed prices, the capitalist and the landowner would be able to seize the whole of the product in excess of that required to keep the labourers on the verge of starvation.

These conclusions cannot justifiably be derived from a study of Ricardo: he fully realised the possibility of an improvement in the lot of the labourer, and recognised the possibility of so distributing the surplus product

obtained in a quickly progressing country that the lowest classes may obtain some share. He says:—

“The natural price of labour . . . essentially depends on the habits and customs of the people. . . . Many of the conveniences now enjoyed in an English cottage would have been thought luxuries at an earlier period of our history.”

Again, he says:—

“The friends of humanity cannot but wish that in all countries the labouring classes should have a taste for comforts and enjoyments, and that they should be stimulated by all legal means in their exertions to procure them. There cannot be a better security against a superabundant population. In those countries where the labouring classes have the fewest wants, and are contented with the cheapest food, the people are exposed to the greatest vicissitudes and miseries . . . they are already so low that they can fall no lower.”

The iron law has been true throughout long periods, and even to-day it is essentially true over large parts of the earth, perhaps particularly in the thickly-populated agricultural countries of the East, especially in parts of India and China. In such countries a powerful landlord is able to rack-rent his tenants; if there are serious obstacles to movement, competition between landlords is absent, and the state of the labourers may be worse than under the most pitiless competition. In such countries, population responds readily to changes in the level of wages.

The Physiocrats and the German socialists drew their conclusions from different types of economic organisation; to the French peasant the enemy was the great landowner; to the socialist he was the man who controlled capital. The experience of the last century has shown that the so-called iron “law” may be evaded in either an agriculturist or a capitalistic manufacturing community. Denmark, Holland, and, to a less extent England, have shown the

possibility of raising the wages of agricultural labourers well above the mere subsistence point. In a developed manufacturing community, the case is yet clearer. The last century witnessed a great increase of wealth in this country; capital accumulated while personal expenditure transcended former levels. A large share of the increased wealth has undoubtedly been taken by owners of land and capital, but it is yet true that the working classes are to-day more prosperous than they have been for at least a century and a half, and a labourer has certainly access to more material wealth than ever before.

3. The Wage-Fund Theory

The industrial progress made by England during the Napoleonic wars led men to realise the importance of capital in wealth production; hence there developed the idea that wages were limited by the amount of capital in use; its fuller development led to the Wage-Fund Theory of J. S. Mill¹: he supposed that wages depended on the "proportion between population and capital."

A labourer often lives from day to day; if he is making cloth by the aid of machinery he will not wait till the cloth is completed and sold before receiving his wages; the entrepreneur provides the fixed capital required in the manufacture, and also gives to the labourer part of his stored-up wealth, *i.e.* circulating capital, so that the labourer's wants may be satisfied while production is being carried on. Thus the wages are actually paid out of circulating capital owned or controlled by the entrepreneur. Hence it appeared to the older economists that wages were limited by the amount of capital which was at hand to pay them.

¹ This does not mean that Mill first formulated the theory. It was held in some form or other by all the writers of the English Classical School.

This theory involved no real contradiction to the subsistence theory, for it was often assumed that the total wage fund available for payment did not allow of the payment of much higher wages than were necessary for subsistence; it allowed of the hope that if ever capital increased much faster than population, wages might rise; this was held to be unlikely by those who accepted the conclusions of Malthus.

Marshall believed a wage fund to be highly problematical. It is true that at any time all wages have been paid from a fund in the hands of entrepreneurs, and that the value of the product has no direct influence on wages, but the theory suggests that the fund bears a nearly fixed proportion to total wealth; and this is highly improbable.

First, the payment of wages out of money controlled by the entrepreneur is an advance payment dictated by the necessity of the labourer; the true source of wages is not a fund but a flow of commodities; it happens that the goods for which a man receives payment may not be sold by his master till long after; none the less, the entrepreneur estimates the probable value of the finished goods, and the hope of future receipts determines the payment of money immediately in his possession. In the case of goods continuously produced under steady conditions there is no difficulty at all: the fund for payment of present wages is actually the money he is receiving for similar goods produced beforehand and now being sold. Here it is plain that the labourer is paid from the receipts from goods made by him. Under other conditions the entrepreneur may mistake the amount he will later obtain for the goods being produced, and if his mistakes are many and serious he cannot continue business. The source of wages is thus in reality not an approximately fixed money sum, but a flow of goods which will become a money income.

Further, modern credit developments have made the application of capital to industry much easier than formerly.

During times of good trade, employers try to tempt outside capital into business by offers of higher interest and are willing to pay more for bank credits. Capital is very mobile and fairly easily finds productive employment. When an employer wishes to take advantage of favourable trade conditions he will be more willing to pay high wages than at other times. The existence of a stock of money set aside for payment of wages seems contrary to experience.

The theory carries with it a peculiar conclusion: if the wage fund is fixed and the supply of labour is doubled, it follows that if the theory is strictly true the average rate of wages is half its former rate. It is quite true that if capital and labour are present in the most favourable proportion, an increase of labour will obtain a less than proportionate advantage in that the proportion will be less favourable than before. Even so, if the amount of labour is doubled the product will normally be greatly increased, though it will not be doubled; thus the employment of more labour will lead to an increase in the fund from which labour is paid; the number of sharers in the dividend is increased, but so also is the dividend.

4. Criticism of the Above Theories

The subsistence theory in its various forms rested on three assumptions: unrestricted competition; rigid scarcity of land; and a rapidly increasing population. It was a generalisation from special circumstances of time and place, and it has not conformed with the experience of the past hundred years because its fundamental assumptions have not operated without serious modification. Land scarcity has been eased by mechanical transport and agricultural science; population has not increased in the proportions anticipated in the early nineteenth century; and competition has never worked without restriction.

But the theory did contain two elements of truth. It drew attention to the fact that scarcity of population

relative to other resources of production plays a determining part in fixing wages; and indirectly it suggested what experience has since proved, that wages cannot be decided arbitrarily in the long run.

Professor Taussig has argued that the Wage-Fund doctrine yet contained germs of truth, apart from emphasising the part played by relative scarcity of labour in determining wages.

In the first place it stressed what is an undoubted fact in the modern world, that wages of labour come partly from past products of labour, as well as from present products, as is implied in the various forms of the productivity theory. The moment we think of real wages, the consumable goods which minister to human enjoyment, and the manner in which production is followed in industrial societies, it is obvious that present labour does not provide the whole of present real wages.

Secondly it indicates the procedure by which wages pass into the hands of the labourers, and thus draws attention, not indeed to ultimate causes, but to the immediate causes which affect wages.

Hired labourers are dependent on a sort of wage-fund that is in the hands of the capitalist class; in other words the labourers' income is derived from what the capitalist class finds profitable to turn over to them, but this is by no means a fixed fund and solely controlled by the employers.

Taussig points out, whether wages are paid from capital or not depends on how we define capital. If we define capital as wealth not yet in an enjoyable shape, labour is certainly not paid from capital. But labour is continually engaged in putting finishing touches to wealth not yet in a consumable form, and thus carrying it forward to the stage where it becomes a source of real wages.

But even granting the existence of a wage-fund in a certain sense, it has reference only to the relations between hired labourers and capitalists in modern communities.

It describes important parts of the machinery of production and distribution, but it sheds little light on the permanent relationships between real capital and real wages. In other words it gives us little information concerning the ultimate causes which make the real income of a nation large or small, and which govern, in the long run, the proportions which are distributed as rent, wages, and interest. This is roughly the position taken up by Taussig in *Wages and Capital*.

Few controversies in Economics have been more violent than that over the question of whether the source of wages is to be found in capital or in the flow of present products. The former was the view held by the English thinkers from Ricardo to Mill, and it has the support of Böhm-Bawerk; the latter was the opinion prevalent in England and America from 1880 down to 1914. Neither view accounts for all the facts. In some cases, where the time interval of production is very short, personal services, and the final stage of production, for example, wages may be said to be paid out of present products. On the other hand, where the time interval of production is long, it is clear that the labourer does not obtain his wages from the product of his labour, either directly, or by the exchange of the product for other products. In such cases wages do come mainly from capital.

But, as Wicksell points out, capital is used to advance not only wages, but also rent; and the proportion in which this advance is divided depends mainly on the productiveness of these factors at the margin. Wicksell does not, of course, subscribe to the old view of a rigidly predetermined even wage and rent fund, but he sees no objection to regarding as an annual rent and wage fund, that part of the year's production of goods and services which is used by the capitalist class for the purpose of hiring land and labour for further production in order to maintain its

capital intact. At the same time he points out that the use of the term gives us little help in economic analysis.

So long as we hedge the concept with due limitations, that is to say, if we remember that capital and current products enter the fund, that it is used for both wages and rent, and that it is not proportioned by rigidly predetermined conditions, the wage-fund concept is not really opposed to modern theory. The wage-fund related wages to the number of labourers. Modern theory assumes that, if the supply of labour increases at a greater relative rate than the supply of capital and land, diminishing returns will accrue to labour. On the other hand the classical economists constantly reminded the labourers that only by restricting the supply of labour could wages be permanently increased. Modern theory points out that if the supply of labour increases at a rate that is relatively slower than that of the other factors, the share of labour will increase at the expense of the capitalists and the landowners. There is, therefore, something to be said for the view that in general principle the wage-fund doctrine was only an alternative approach to the marginal productivity theory that we shall discuss in the next section.

5. The Marginal Productivity Theory of Wages

These attempts to find a simple statement which should give a broad explanation of the level of wages gave place to a new theory which dealt with the question from the standpoint of the individual. A labourer receives wages because he helps to produce a commodity which has a money value; an employer is thus willing to pay for such service, and he is disposed to give the greater remuneration to the labourer who helps him to earn the more profits. This obvious fact led to the Productivity Theory of wages.

The classical economists developed the Cost theory of value, and later economists showed that the coincidence of

exchange value and cost was secondary and that the essential determinant of value was marginal demand. Similarly the older economists argued that wages tended to agree with the cost of rearing and training a family, but the later economists concentrated on the demand for labour. It is easy to show that the cost of rearing cannot in itself directly determine the wages to be paid: apprentices trained to follow a particular trade cannot thereby claim high wages if inventions have transformed their work so that specialised skill is rendered useless. A youth who has received a good school and college education cannot, merely because of his expensive training, claim a higher reward if forced into direct competition with other men. An employer pays, not according to training, but for results: however effective such training may be in raising wages, they are raised only if the training has rendered the labourer more useful to his particular employer. A keen business man expects the same type of results from employees that he does from expensive machines.

Every employer tries to limit the wages of a particular worker to the amount he is worth to him; if for any reason the wages are higher than the worker's marginal product, sooner or later dismissal or a fall in wages must occur. If productivity is so obvious a controlling factor in individual remuneration, it must find a place in the general theory of wages.

The theory of distribution is peculiarly difficult in that it attempts to divide the national dividend among owners of factors when each factor is continually varying in amount. The theory of rent was artificially simplified by assuming the existence of a normal rate of profits for which tenants were willing to work the land. So in discussing wages it is advisable to consider rent and interest as constant and determinate factors, and then to discuss how the product unappropriated as rent and interest is distributed between the labourer and the entrepreneur; if we know exactly

what share is claimed by capitalist and landlord the remaining task is simplified.

Consider an example in which rent and interest are absent. A fruiterer sends out boys to gather wild blackberries; if he obtains a considerable amount of fruit he can obtain a good price in the town; each boy gathers, say, a hundred blackberries in an hour. Each boy brings to the fruiterer an hour's product, whose value can be estimated.

Let us suppose that the fruiterer engages ten boys to pick fruit for an hour at a wage of sixpence per hour. The product of each boy's work will sell, say, for one shilling, so that when the wages have been paid the fruiterer will be left with a profit of five shillings, which we shall suppose is much above the average rate of profits.

Clearly, the fruiterer will either engage more boys at the same rate of wages, or will persuade the others to work longer in the hope of increasing his total profits. But beyond a certain point, the value of the product of every additional hour's work will begin to decline, for as demand begins to be satisfied, further supplies can only be sold by reducing prices. The fruiterer will stop hiring boys, or extending their hours of work, when the value of the product of each hour's work has fallen to sixpence, plus the average rate of profit.

Suppose now that the number of boys is limited, and that they have alternative employment, so that the fruiterer can obtain only fifteen hours' labour, and that the net marginal return has fallen to ninepence per hour per boy. If now the boys have plenty of pocket money and consider the fruiterer too grasping, they may be dissatisfied with the remuneration of sixpence per hour, and if there are housewives who will pay more than sixpence per hour the price of their labour may be forced up. If competition is keen the fruiterer may be obliged to pay the full ninepence per hour, assuming that this rate already includes

satisfactory profit to himself. If, however, there is an abundance of boy labour, and if the fruiterer meets no competition, and if pocket money is scarce, blackberries will be so abundant that the dealer cannot sell them all, and he may only offer a penny for an hour's work; even at this price the boys may compete against each other; the dealer may make an immense profit on the bulk of his fruit because there is such keen competition to sell him additional supplies at a penny; thus the dealer gets the whole of the fruit at this low price.

The wages of the boys tend to coincide with the marginal product; if wages fall below this level, competition by housewives will force up wages; if wages seem abnormally high to the boys, competition will bring them down by lowering the marginal product; the same will happen if wages rise above marginal return, or else the dealer must cease to employ boys; except for philanthropic reasons, the dealer will not continue to buy an extra supply at a loss, even though he has made a high profit on the earlier supplies.

This illustration represents certain of the forces acting in everyday business. It is a simple illustration, because rent and interest are not concerned, because the boys are supposed to do the same work with equal efficiency, because the marginal product can be easily recognised and separated off, and because free competition has been assumed on one side and a practical absence of competition between rival dealers on the other. Yet the same forces work in the most complicated business, though overlain by other phenomena.

6. Application to Actual Conditions

The practical conclusions are that, under perfect competition and free play of self-interest, wages cannot permanently be above the marginal product; that competition between producers will force them up to that

level; and that there are other forces working through the demand and supply of labour and of commodities which tend to bring wages into consonance with certain normal demands on the part of labour, while retaining contact with the marginal product. These principles will now be further considered.

First consider the question purely from the standpoint of the employer, treating labour, though able to look after its own interests, as any other productive factor, *e.g.* machinery. Suppose in a given business that the amount of land, raw materials, fixed capital, etc., is constant, and that the rate of interest on capital and the rent of the land is fixed and known; this assumption is never true, but it is an invaluable help in solving this intricate problem. Thus, just as normal profits were assumed in discussing rent, normal interest and normal rent will now be assumed; the existence of normal profits will also be assumed, but these will be supposed to be liable to variation in the individual business. Perfect competition and self-interest will be assumed for the present.

In the above conditions the market for labour will be in equilibrium when each man receives the same rate of wages, and when that rate equals the value of the marginal product of the supply of labour. Each producer will hire labour up to that point, because at that point his total profits would reach a maximum. The following reasoning will make that clear:—Let us suppose that the value of the marginal product of labour is greater than the wage paid. In that case an additional man would add more to the value of the output than the cost of his wages to the producer; on the other hand, if the wage paid were greater than the value of the marginal product of labour, the dismissal of a man would save more in costs than the value of the output lost.

The number of workers hired by each producer will depend, therefore, on the rate of wages he has to pay.

In perfect competition that wage must be such as will leave no surplus of unemployed labourers, for if there were any unemployed workers they would offer themselves to the producers at a rate lower than the existing wage. To prevent being displaced, the labourers in employment would have to accept lower wages; the value of the marginal product of labour would be greater than the new wage; the producers, therefore, would increase their supplies of labour.

This movement of a gradual reduction of wage rates on the one hand, and that of an increasing demand for labour on the other hand, would continue until the whole of the labour supply was in employment of a wage equal to the value of the marginal product of labour.

The precise way by which the unemployed labour would be absorbed at a falling wage rate depends upon circumstances. In most cases, and especially in the long period, the proportions in which the factors of production are combined can be varied. In such cases, more labour can be employed either by expanding output, or by changing the methods of production, or in both ways. Where the factors of production must be combined in fixed proportions, more labour can be employed only by expanding output.

Where the proportions between the factors of production employed can be varied, the fall in the hire price of labour would lead to a substitution of labour for capital, so that each firm in an industry would tend to employ more labour and less capital than before. But this substitution would have a further effect; average costs of production would be reduced by substituting cheaper labour for dearer capital, and also by the fact that the reduced demand for capital would tend to lower its hire price. Producers would make surplus profits so that either they would expand their outputs, or, if they were already working at the most efficient scale of production, new

firms would enter the industry. In either case the amount of labour employed would increase until the fall in the price of the product brought about equality between the value of the marginal product of labour and the wage paid.

If the proportions between the factors of production cannot be varied in an industry, additional labour can be employed only by expanding output. As, however, the fall in wages will raise the profits of the producers, there will be a strong motive to expand output either by existing firms enlarging their scale of production, or by the establishment of new firms. In any case additional labour will be employed up to the point at which the fall in prices, due to the enlarged output, sweeps away surplus profits. At this point the value of the marginal product of labour will again equal the wages paid.

We can also consider the matter from the side of the labourers. If they consider their wages insufficient they may try to obtain better pay from other employers, or work in other trades; if some are able to obtain better work the value of their marginal product will rise and their wages will improve. If there is no possibility of obtaining other suitable work, the same effect will result from the slow shrinkage of labour in an industry; newcomers will not be attracted. Thus, if in any particular industry the wages are lower than are warranted by the conditions of work, the limitation of the supply of labour to that industry will, in time, lead to higher wages.

The following illustrations of the marginal productivity theory are instructive. Consider first the case of gang labour of an unskilled type. Here, however, foremen are necessary. A contractor considers that his group of labourers will do more work if controlled by foremen: one foreman may obtain more extra work than five labourers would do, and a second, than two labourers; if foremen are as cheap as labourers he will continue to employ foremen till the extra product obtained by the last foreman is equal

to that directly produced by a labourer: in these circumstances a foreman and a labourer would obtain the same wage. In practice, suitable foremen are rare: if they were offered labourers' wages, some might wish to be foremen because they like power, but others would wish to relinquish responsibility and remain labourers. There will usually be a shortage of efficient foremen: the employer is not able to obtain so many foremen that the net marginal product is that of a labourer; competition among employers will thus make the wages of a foreman equal to his marginal net product, making them higher than those of a labourer.

Consider now a factory in which fancy textiles are woven. A designer will have no direct influence on the amount of output, but he may raise its value by far more than the value of the cloth woven by an extra weaver; even so, he will obtain no higher wages if designers are common, for the employer would obtain other designers till the marginal net product was the same as that of a weaver; good designers are, however, rare, and so can obtain higher wages. The dyer, the works chemist, the commercial traveller, and the paid manager himself would, under the given conditions, obtain a salary equal to the marginal net product for his class. The manager does vitally important work, and good managers are scarce; thus his salary is far higher than that of an ordinary weaver. On the other hand an unskilled man may seek work; even if he is the only unskilled man in the factory his marginal net product may be below that of the weaver class; if many are competing for unskilled work the wages must fall to the net product at a point lower than a weaver's wage.

Economists now usually restrict the term marginal product to the case where the proportions between the factors of production employed can be varied. Where labour must be combined in fixed proportions with one or more other factors, the term marginal net product is used. In such cases the combination of labour and the other

factors is treated as a unit, and under free competition the value of the marginal product of the unit will be equal to its price. The value of the marginal net product of labour, or the marginal wage, will be the value of the marginal product of the unit minus the price that must be paid for the other factor or factors.

7. Differences in Efficiency, and the Effects of Competition

The case of differences in efficiency must now be considered; so far all the members of each class have been assumed of equal efficiency. Suppose a number of bricklayers, working under a contractor at a standard rate of wages, and that the average worker is paid for his exact net product. The best workers are being paid less than the net value of their product; they may threaten to leave, and if so, the master will be willing to pay them a wage as high as their net product; thus they will obtain higher wages than the average. The worst workers are paid more than their net product, and are thus a source of loss to the master (it must be remembered, however, that in practice the employer may be willing to work for a time at a loss if the product covers prime costs); the master can then offer to these men the alternative of lower wages or dismissal.

Thus within each class of workers there will be differential earnings. The standard may be that of the worst labourer engaged: each of the others has a differential advantage in production, for which he receives a differential payment: this is a kind of rent, and is often called the Personal Rent of the individual in question. When considering the class as a whole, it is better to take the average wage as a standard and to regard it as the normal wage of the class in question; the wages of the best men will be above this, and *vice versa*.¹

¹Where trade union standard rates exist, exceptional workers sometimes receive a bonus in some form or other. In any case they are in more regular employment so that their earnings over a longer period are greater than those of the less efficient men.

So far an individual business has been considered; now suppose that different businesses vary in their wage rates; if one firm offers abnormally high wages to labourers, there will be an inflow of labourers from other firms; the marginal product of labour in the firm in question will fall, sooner or later, and that in the other firms will rise. Thus the wages in the favoured firm will fall and those in the others will rise; this will occur as long as there is any difference in remuneration between different firms for identical work. (N.B.—It is assumed for the present that the level of wages is the sole factor which influences movement.) Thus, as we have shown that in any one particular firm the wage coincides with the marginal product, whatever the conditions of demand and supply, it follows that all labourers throughout the country obtain wages fixed on this principle.

This will also hold for any other large class of workers: the wages of equally efficient weavers, draughtsmen, or managers will be equalised in different firms; it has been shown that in any particular firm the wage or salary coincides with the marginal product; it thus follows that the wages of the normally efficient member of any class of workers coincides with his marginal product; therefore the wage of any worker is influenced by the same causes.

Thus there are two main types of competition: first, there is that between men doing similar or related work; this equalises the wages of equally efficient workers, and also arranges the men of differing efficiency in the order of their efficiency. Next, there is the indirect competition between men doing unrelated work; even though not a single man of one class could do the work of a single man of another class, *i.e.* if the law of substitution between trade and trade were inoperative; this competition would still exist. The employer may be in doubt as to whether to employ an extra mechanic or an extra weaver, though their work is different; competition between trade and trade

is real, though indirect. The keenest competition will not equalise wages, for the class whose members are relatively scarcest or, more strictly, whose marginal product is highest, will obtain the highest wages.

Considering the problem broadly, it follows that in the country as a whole, normal wages in the same trade are equalised; between one occupation and another, that class of workers which is fully occupied and whose further services are eagerly demanded will obtain high wages throughout the country; competition between one firm and another will not remove the inequality between occupational wages. Diamonds obtain a high price because the least use to which they are put gives a high satisfaction; good managers obtain good wages for a similar reason.

8. Long-Period Changes

The above is the pure theory of wages for short periods. It is unlikely that real wage inequalities will persist indefinitely. Some men obtain high wages because of natural abilities; these are personal rents; it is not probable that in any large class the superiority can be explained wholly by personal advantages. A class may obtain a superior wage because it is able to take advantage of temporary good fortune, *e.g.* that of millowners who could turn to munition-making with little trouble; often also a class can obtain a higher wage because the trade is learned only with difficulty. Labour at large may fully realise that one class is receiving abnormally high wages, but a considerable time may elapse before the influx of new labour drags down the wages to the normal level. Thus if the "cost of production" of a doctor is high, he may obtain a remuneration which will more than compensate him for initial expense of training; there may be a new demand for doctors, and the profession cannot be quickly recruited from external sources. In time, wages in a particular occupation will alter (always in consonance with

the marginal demand) so that they bear a relation to the cost of training. In the long run, the remuneration of a normal doctor of average intelligence will oscillate about a level which will just compensate him for his expenses of training and for the postponement of his earnings. The principle is the same as that in the case of commodity prices: the price of cotton under perfect competition is always its marginal utility; this price, however, stimulates or depresses production; a new marginal utility determines the new market price; these changes continue until the price fixed by marginal utility is coincident with cost of production.¹

9. Objections Advanced Against the Productivity Theory

The proposition that wages equal the marginal net product of the worker has been more vigorously attacked than any other aspect of marginalism, but many of these criticisms are influenced by moral rather than economic considerations. The productivity theory makes no claim as to what the labourer should receive on grounds of moral justice; it merely explains what he must tend to receive under certain concrete conditions.

But the most typical objection is that urged by Hobson in his example of the fishermen.² He argues there that the amount deducted from the total product when one fisherman is taken away is much greater than can possibly be assigned to him, because with his removal the

¹ This does not mean that the cost of the doctor's training determines the amount of his income or remuneration. If the demand price for doctors' services falls so low that it would not be profitable to become a doctor, prospective entrants will seek other fields. This movement will continue until the demand price for doctors' services rises to the height at which it will be worth while to incur the necessary expense. The extent to which supply will fall off with a decrease in demand price depends largely on the demand prices in other fields. It should be noted that in the case of the Professions candidates are influenced by more than simple pecuniary motives.

² Hobson: *Industrial System*, pp. 114-120

organisation of the whole group is disturbed. In other words Hobson argues that as the product is due to an organic union of the factors of production, any separatist measurement of the contribution made by a specific factor is impossible.

The flaw in the objection has already been noticed in another connection where it was shown that there is no fundamental difference, in the matter of economic significance, with respect to the marginal theory, between a commodity like sugar, which can be purchased and consumed in very small quantities, and a durable good like a house. Expenditure on both can be reduced to a rate for periods of time, and in this way large blocks of expenditure, which, considered as units in themselves, may not coincide with marginal utility to the purchasers, can be dissolved.

In industrial production, if you attempt to associate small units of organisation with comparatively large units of labour you will reach misleading results. But what is really paid for by the wages expended by the entrepreneur is not units of commodities produced, but a stream of small units of service,¹ and once this point is grasped many apparent difficulties with respect to the margin disappear.

To argue that the specific product due to the labour alone cannot be separately measured is to argue that the conditions of production are such that the various factors must always be combined in definitely fixed proportions. But this is contrary to fact. The proportions in which the factors of production can be combined for the same productive purpose are usually variable, especially in the long run. A little more or less of the one can be combined with a little less or more of one or each of the others, in the majority of cases at any rate; and this fact provides the solution of the difficulty.²

¹ For a mathematical answer to Hobson see Edgeworth: *Collected Papers*.

² See Knight: *Risk, Uncertainty, and Profit*, pp. 105-113.

It is true that in some cases one particular factor in a combination may not be divisible: a factory, for example, is a fixed unit for a large or small output, but only for a short period. The fixed plant of a factory also has an appearance of fixity, but in the long run it is continually being modified by new inventions which change the proportions between capital and labour. Any force the argument has is valid only in the very short period, and ultimately forces governing real wages are not operative to any decisive extent except in the moderately long run.

Even where labour must be combined in fixed proportions with some form of capital it is usually possible to modify the proportions in which these labour-capital units are combined with other production factors.

It is sometimes argued against the productivity theory that it merely fixes the upper and lower limits of wages, and that in consequence, wages can vary within these limits without affecting the demand for labour. This, of course, arises from the fact that in actual practice, men are not of equal efficiency. On the other hand, this range of variation can be only small, because the great majority of labourers cluster around the average level of efficiency—hence a neglect of the extremes does not involve great theoretical inconvenience,¹ and for purposes of elementary analysis, labourers in each grade may be assumed to be of equal efficiency.²

It must also be remembered that the marginal productivity theory is primarily an equilibrium theory. Under conditions of perfect equilibrium the theory is rigidly true; under dynamic conditions wages may diverge from marginal productivity in either direction, but, in the

¹ This problem is analysed in detail in Hicks: *Theory of Wages*, Ch. II.

² In many occupations, Trade Union regulations and such forces as imitation and custom tend to equalise the output of different individuals.

absence of specially imposed restrictions, even in the concrete industrial world, wages always tend to spring back to the point of marginal productivity.

Finally, when it is said that the wages of the worker tend to equal what he is worth, the statement merely means worth to the product. It does not mean moral worth. Marginal and moral values may diverge considerably. A cinema star may receive a reward out of all proportion to the moral worth of her services simply because those services have a high exchange value. Conversely, some workers may receive a wage below the moral worth of their services just because those services have a low product value.

10. The Scarcity Principle and Wages

Some economists have contended that the productivity theory is superfluous, and that relative scarcity of labour alone decides the amount of wages. This, however, is to draw a distinction where such cannot exist. As we have already noted, the very notion of a margin implies a relative scarcity of the good or commodity in question. The demand for labour is derived from the demand for its products, and the marginal demand for the products of labour rises and falls with changes in the volume of their supply, or, to carry the argument back a stage, with changes in the relative scarcity of labour.

If the demand price for labour, *i.e.* wages, rises, it is because the price of its products at the margin has risen; on the other hand if wages fall because of an increase in the supply of labourers, this means that the price of the products of labour has fallen at the margin because these products have become less scarce relative to the demand for them.

This, however, is only another way of stating the productivity theory. When we say that wages conform to the marginal productivity of the labourer, and that his

wages are high because his marginal productivity is high, we mean that because the supply of his products is relatively scarce, each unit has a high degree of productivity in satisfying demand. High and low productivity in an absolute sense explains, not high and low charges, but rather high and low wages in the existing economic order of society. High absolute productivity and high real wages coincide only in a society built upon a basis of direct production.¹

This refinement, however, does not invalidate the proposition that wages, whether high or low, depend upon productivity at the margin of production.

The principle of reserve prices arising out of alternative uses which we employed in connection with the market for commodities, and land rent, applies also to the supply side of labour. Many occupations demand qualities so similar in nature that, in the absence of imposed restrictions, it is comparatively easy to pass from one to the other.² The lowest paid type of labour obviously constitutes a reserve price in such cases.

Another illustration of this point is provided by the unemployment insurance scheme. It is difficult to generalise with safety on the post-war effects of unemployment on wages because these effects have been distributed very unequally; but there seems little doubt that wages have fallen less in some trades, the unskilled occupations especially, than would have been the case without the insurance.

Once again, it may be noticed that the marginal man in any industry is not necessarily the last employed in time,

¹ A distinction has already been made between physical and value productivity.

² This may read a little oddly in these days of huge numbers of unemployed, but certain types of unemployment have less effect on this matter than may be supposed at first glance. It is not uncommon to-day for agricultural labourers to find alternative employment in the building trades.

or the least efficient. If the demand for labour falls off in a trade so that wages must be reduced to curtail the supply of labour, it is just as likely that the better type of worker will leave the industry for alternative employment rather than submit to the reduction of wages as that the least efficient men will be dismissed. What actually will happen in a concrete case is a question of circumstances.

11. Effects of Unemployment on Wages

At first glance it might be supposed that unemployment, constituting as it does a reserve supply of labour, that is, an increase in the potential supply, must pull down wages. Certain qualifications, however, are necessary to the general proposition. As Dr. Hicks has pointed out, it is possible for unemployment to be consistent with rising wages.¹ The explanation is that unemployment falls into two distinct classes—that which is the result of a trade depression, and that which is due to the unfortunate fact that in every society there is a number, more or less large, of normally unemployables.²

As experience proves, the first class of unemployed undoubtedly lowers wages, but the second class affects wages to little or no extent. For various reasons, mental, physical, and moral, they do not constitute a part of the normal supply, and hence they do not enter into serious competition with the normal workers of an industry. This sub-normal class of workers is only employed in times of exceptional scarcity of labour; a rise of wages due to a shortage of normal workers in an industry is not likely to be counteracted by this class of unemployed, because, apart from very exceptional circumstances, they are not worth the marginal wage paid by the industry.

¹ Hicks : *Theory of Wages*.

² See also Cassel : *Theory of Social Economy*.

12. Non-Competing Groups

The forces which interfere with free competition may be grouped as "economic friction." The first example is the immobility of labour and capital which rules everywhere except under certain conditions, *e.g.* on money markets in a modern progressive country. Even a young unmarried man hesitates to leave his home unless his prospects are greatly improved; large increases in wages may fail to tempt married men to move to another place; thus it follows that the normal wages in one part of England may be much higher than in another part. This tendency is, however, often offset by the fact that a relatively small migration may suffice to equalise wages. If an abnormally pure ironstone were found in Kent, wages there would at first be very high; it would not be necessary for all the ironworkers to move here, for if a few came, the marginal net product would fall in Kent and rise in the older producing districts; thus equality of wages might be obtained with little difficulty. None the less, the equalising effects of competition are often seriously hindered by the lack of mobility from place to place.

Immobility between productive classes is yet more serious. Cairnes tried to avoid the difficulty by introducing the conception of "non-competing groups": he supposed that producers could be divided into groups, the members of which competed among themselves, while the members of one group hardly competed with those of another. There is some truth in this: unskilled men find it very difficult to become skilled labourers, and it is much more difficult for the son of an unskilled labourer to become an artisan than it is for the son of a skilled worker. There is a similar gap between the skilled worker and the professional man, and between him and the entrepreneur. The classes are, however, not so definite as is sometimes supposed: it is perhaps just as difficult for an unskilled labourer to become an entrepreneur to-day as it was fifty

years ago, but it is easier to make a small ascent up the social ladder. The distance between class and class is still large, but the stages are smaller and more numerous. Universal education has increased the mobility between one class and that immediately above or below it.

It is easy, therefore, to exaggerate the force of Cairnes's theory. It contains a good deal of truth in a general way, for even under the changed conditions of the present day an energetic and intelligent labourer finds difficulty in becoming a skilled worker; a child becomes accustomed to the atmosphere of the class in which he is reared, and unless consciously trained to direct his intelligence will find great difficulty in adapting himself to new conditions. So also the child of the artisan finds the employing or the professional status equally difficult of attainment.

On the other hand the exceptions are very numerous, and tend to increase. Even in the case of adults a surprising number of people manage to pass from a lower to a higher grade occupation.

13. The Influence of the Standard of Living on Wages

The question is frequently raised, does wages determine the standard of living, or does the standard of living determine wages?

The answer to the question depends on circumstances. The marginal productivity theory applies only to a competitive society in which wages are determined by the action of economic forces; but within the framework of such a society it is possible for some wages to be determined by non-economic considerations. The wages of engineers, for example, must be governed by the marginal productivity of their services. They cannot be fixed arbitrarily, without causing widespread unemployment, because the products of these workers must sell at a competitive price. The wages of engineers cannot be raised ten per cent. by raising the prices of their products ten per cent., because

the demand for engineering products is very elastic. This is true of all products that have to face foreign competition on a world market.

On the other hand, the wages of tramwaymen, and the salaries of teachers, are fixed by other principles. It is true that the wage or salary offered must be sufficient to ensure the necessary supply of labour, but the actual wage or salary is probably definitely higher than that as it is an accepted principle that the employees of Public Authorities shall enjoy a certain standard of life.

But the standard of living idea can exert only a limited influence. The State can force up the wages of workers in a limited number of trades above the competitive level so long as these trades do not produce for the competitive market (this fact limits the application to the public and semi-public services); and it can force up wages to the value productivity level, but it cannot force employers to pay wages above the market value of the product due to the workers in obedience to some arbitrary idea of a standard of life. As a general rule it is the productivity of the workers that determines the standard of living.

The standard of living principle may affect wages in the long run, indirectly, through changes in population. If the desire to maintain a certain standard of living leads to a limitation of the supply of labour, the marginal net product of labour will tend to increase, and the final result will be a rise in wages.

These effects may not be noticeable till a whole generation has passed, and there is little doubt that the population factor is one of great importance. There is a tendency at the present day among the working classes to expect a higher standard of living for their children than they themselves have obtained ; limitation of families is a very marked phenomenon in most West European countries.

Even so, however, it is inaccurate to say that the standard of living determines wages.

14. Relation of the Productivity Theory to Earlier Theories

The productivity theory of wages undoubtedly explains a large number of essential facts which are left untouched by earlier theories. It has the further merit of explaining the facts on which the iron law and the wage-fund theory are built.

Suppose that population increases up to the subsistence limit; this supposition is nearly true in certain circumstances. If wages are higher than the normal, population will increase and employers will obtain abundant and "cheap" labour. Labour will be pushed into uses which achieve a very low production, and there will be competition for employment at these levels. The marginal net utility will be low.

There is an essential truth latent in the wage-fund theory: it is that labour will gain by the extended use of capital in conjunction with it. If in a certain business, capital is used so that the amount of labour employed is proportionately too low, a wise employer will obtain more labour. The marginal return of the labour is greater than that of capital; thus the owner of capital obtains a less proportion of the amount available for distribution and the labourers a greater. If the total amount of capital in the country increases, while the amount of labour is constant, wages will rise throughout the country. If labour increases faster than capital, the marginal net product of capital will rise relatively to that of labour, and so far wages will fall.

15. Custom, and Standard Rates

Custom is not so important a barrier to our competition as it was in former times or is to-day in less civilised countries. It is a more important factor in the professions than in manufacture; lawyers' fees are examples of customary charges. Even where the price of labour is settled by custom or law, competition is partly though

not fully operative ; extent of demand is fixed by price ; thus lawyers compete among themselves for the legal work required at the standard prices ; such competition depends on differences in efficiency and not on price cutting (so far as standard rates are operative).

Standard rates are also operative in industry to some extent. A master cannot attempt to estimate exactly the marginal net product of a single manager, and the manager himself cannot estimate his own worth more accurately. Such a salary as £1,000 a year is obviously an approximation ; the employer can afford to pay a single manager considerably more than he need, but ordinary wages must be calculated more accurately. Even the ordinary workmen are not paid exactly according to output: it is much easier to pay a standard wage than one which accurately reflects differences in the amount produced.¹

It is impossible that a human being should manage his business with the minute accuracy that pure theory demands. The most careful employer must make rough adjustments ; neither he nor his workmen have the detailed knowledge which can most efficiently adapt means to an end ; the men cannot properly realise the master's financial arrangements, while the master cannot be fully conversant with changes in the labour market ; he may even make grave mistakes in relation to the commodity markets which immediately concern him.

No employer is thus able to say exactly what man shall be dismissed or employed ; the foreman responsible for these matters must make his own rough adjustments, and his personal feelings will have some weight. The master, again, will normally behave with more consideration than strictly economic considerations would demand ; men are

¹ Standard rates are not an effect of Trade Unionism, as is often supposed. There is a natural tendency to development in that direction ; see Hicks: *Theory of Wages*.

often retained in slack times through motives which are partly philanthropic.

An employer could not make accurate adjustments if he chose ; in practice, the arrangement and use of factors of production is more clumsy even than it need be. Both employer and labourer often lack mental energy and foresight ; this leads to unsatisfactory results, and there may be culpable waste of resources.

A more subtle limitation of the productivity theory follows from the fact that the law of diminishing utility does not work continuously when the successive units are large ; if there are three under-managers who are just worth their salary, the business will have to develop greatly before a fourth will be appointed ; the adjustment can be made far more exactly in the case of a large number of weavers employed at a small wage.

16. Methods of Payment of Wages

The appeal to experience shows that the productivity theory is not exactly true¹ ; it also shows that it is most nearly true in those cases where economic friction is least effective. The study of wages is attended with difficulty, and caution is needed when the results are being interpreted.

The method of payment is a source of difficulty. Salaries present no difficulty, though unemployment must be allowed for. Ordinary wages are usually either time wages or piece-work wages. A time worker is paid a definite sum per hour or per day ; in theory the wage is independent of the work done ; in practice the master will not permanently employ a man who cannot do a satisfactory amount in a given time, while the worker may not put forth his best efforts if his wage is fixed. Time-work is especially useful when the work is difficult to inspect and the output not easily measured, when work needs great

¹ Except in a state of equilibrium.

care and individuality, or when delicate machinery must be used, and also when intervals of temporary idleness must necessarily occur, as in repair work and in work which is more than ordinarily difficult.

Piece-work is used in cases where the employer desires a large output, especially in cases where the work is straightforward. The employer usually safeguards himself against bad work by limiting the amount which can be earned. The standard rate is fixed by reference to the amount which an average workman can earn; thus the more industrious and efficient do more than the standard amount and receive better wages. When the standard is the amount of work done in a given time, piece-work becomes task work.

These methods of payment may be combined: thus there may be a minimum time wage supplemented by a piece wage. Collective wages are sometimes found: a premium may be paid to a group of workmen in a factory, depending on the output of the group, and the members distribute the premium according to mutual arrangement. There are numerous variations and combinations of the above plans. In addition, profit-sharing may exist, when each workman obtains a small proportion of the final profits.

Piece-work, however, is not popular among workers, who argue that employers tend to cut rates whenever workers are earning high wages. It is also often argued that rates are based on the output of the quicker workers so that the system acts unfairly against the average, and the older men. On the whole, the workers prefer time rates.

17. Wage Variations

Wages investigators must take account of these methods of payment, as well as of fluctuations of employment and even unemployment. When the actual total wages received, however, are known, other difficulties appear. Some wages appear abnormally high or low, but on

investigation it is found that their net worth to the workman is normal. Adam Smith may be quoted here:

"The five following are the principal circumstances which . . . make up for a small pecuniary gain in some employments and counterbalance a great one in others. First, the agreeableness or disagreeableness of the employments themselves; secondly, the easiness and cheapness, or the difficulty and expense, of learning them; thirdly, the constancy or inconstancy of employment in them; fourthly, the small or great trust which must be reposed in those who exercise them; and fifthly, the probability or improbability of success in them. First . . . a journeyman tailor earns less than a journeyman weaver. His work is much easier. . . . Secondly, . . . the pecuniary recompense of painters and sculptors, of lawyers and physicians, ought to be . . . liberal; and it is so accordingly. . . . Thirdly, . . . where common labourers earn four or five shillings a week masons and bricklayers frequently earn seven and eight. . . . Fourthly, . . . the wages of goldsmiths and jewellers are everywhere superior to those of many other workmen. Fifthly, . . . success is very uncertain in the liberal professions. . . . The counsellor at law, who, perhaps, at near forty years of age, begins to make something by his profession, ought to receive the retribution, not only of his own so tedious and expensive education, but of that of more than twenty others, who are never likely to make anything by it."

Smith goes on to point out that the high earnings of successful professional men are really less than they ought to be, because failures are so common; he shows that men are attracted into professions, in spite of the risk of failure, "by the desire of the reputation which attends upon superior excellence in any one of them," and by "the natural confidence which every man has, more or less, not only in his own abilities, but in his own good fortune."

Many men, however, perhaps most men, would prefer a small steady income to a fluctuating one or to a doubtful

one, even if the total earnings throughout a long period were the same ; to many men, uncertainty is an evil in itself ; they would rather earn a steady £5 a week than a fluctuating wage which would be likely to average out to the same amount.

Disagreeable work is in some cases carried out for a very low wage if it can be done by the least efficient labourers. Such work is limited in amount, and there is much competition for it among those who can do it ; thus the wage is low.

18. Real and Nominal Wages

All these factors and others must be considered when real wages are calculated, and the productivity theory, if true, must refer to real wages or net advantages. The nominal wage of workmen rose steadily after 1914 ; the actual amount of money received increased, but the number of commodities which could be bought by the apparent wages probably fell. For past times, real wages have often been calculated by the amount of wheat or other commodity or combination of commodities which could be bought by the nominal wages ; for the same reason, when comparing one trade with another at the present time, the term "net advantages" is preferable as it suggests a more inclusive meaning.

Other elements in net advantages are, first, the presence of payments in kind ; this method of remuneration is dying out, but is still found in cases where earnings include food or clothing ; this "truck system" may develop into the "living in" of some large establishments. Miners obtain cheap coal, and railwaymen cheap travel. On the other hand, some occupations necessitate expenses: the bank clerk must dress better than an artisan who may obtain a better wage ; the city worker must pay for the cost of daily travel from the suburbs. The plumber must have his tools, and the lawyer his books, his

offices, and his clerks. The shopkeeper must pay his rent out of his profits.

Again, a man will often follow an easy occupation at a low wage because it gives him opportunities for study, for following a favourite hobby, or earning money in his spare time by work which offers a change of occupation. Thus the clerk may cultivate an allotment, the mechanic may essay photography, or the artisan's wife may keep a small shop.

Lastly, there is the question of nervous strain and of wear and tear. An employer may put aside a depreciation fund to replace his machinery as it wears out ; he has no personal interest in keeping his workmen in good health as long as he can obtain others to replace them when they break down. Little more than a century ago, employers obtained workhouse children and sometimes literally worked them to death, sure of obtaining another supply. Those evil days have passed, but the workman's health is yet his own concern; though he ruin his health in the service of his firm, he has no economic (as distinct from humanitarian) claim on his employers. Justice dictates that the wages of such a workman should contain an element to compensate him for his diminished efficiency or the ruin of his health. Trades which are recognised as unhealthy may be well-paid, but in normal trades the wear and tear of the workman's body in the service of his employer is too little regarded.

19. Effects of Changes in Demand for Labour on Wages

Should the demand for labour increase in an industry, it usually begins with one or two firms whose influx of orders rises above the normal flow. In such a case what must happen is that the workers must be speeded up or work overtime, or else additional workmen must be employed. The last course will probably be adopted only if the increased demand appears likely to be permanent.

It does not follow that the increased demand will lead to an immediate rise of wages, because there may be surplus labour already in the industry. Should this be so, the firms affected will be able to increase their labour resources without changing the rate of wages. Beyond a certain point, however, further supplies of efficient labour can only be obtained by attracting men from competing firms by offering an increase of wages.

These firms, in turn, are thus faced with the alternatives of raising wages or losing their more efficient workmen, and if the trade boom is gradually spreading through the industry, these employers will have no choice but to adopt the first alternative as the lesser of the two evils. In this way the circle of firms affected gradually widens until the whole industry is included.

Incidentally it should be noticed that the matter does not end with a single industry. A rise of wages in one industry has a tendency to raise wages in other industries, in which the labour employed is of a similar character, for the same reason that a rise granted by one or two firms tends to be diffused throughout a single industry. Where free movement is possible, efficient men tend to be attracted to the industry offering the best remuneration. Employers in these industries will probably find it necessary to make some concessions to retain their best men, and these concessions will be extended to their other employees through the forces which make for standard rates.

In the contrary case of a decrease in the demand for labour the effect on wages is not likely to be great if the fall in demand appears of a temporary nature. Temporary gains may be dearly purchased in two ways. There may be an exodus of efficient men to other trades, and the loss of these men will be severely felt when business revives; and in any case the relations between employers and employed will be embittered.

If the depression appears to be of a temporary nature it is probable that employers will prefer to make for stock, or to see inroads made on their profits, rather than accept the drawbacks attached to a lowering of wages.

If the depression lasts over a longer period, wages must fall. The movement usually begins by certain of the weaker firms cutting wages, and this gives them an advantage in the limited market over their competitors, who are forced to follow suit. Even in the long period, however, the forces that tend to sustain wages in the short period are never wholly absent, and usually prevent the reductions from being as drastic as would otherwise be the case. It is not difficult to see from the above why many employers prefer the dismissal of part of the staff and the retention of the rest at a slightly reduced wage, to the policy of reducing the wages of the whole to the new economic level.

20. Effects of Fixing Wages above and below Competitive Levels

If, for any reason whatever, by minimum wages decreed by the State, or through trade union action, wages in any industry are fixed above the competitive level, the profits of the employers in that industry fall below the normal level. To counteract this an attempt will usually be made to raise the price of the product and so pass the burden on to the consumer.

But the increased price will tend to limit the demand so that the productive capacity of the industry will be gradually curtailed and the number of workers in the industry will be diminished.

The extent of these effects will depend on the elasticity of demand for the product in question. If it is fairly rigid the shrinkage in demand will be small—in the case of monopoly-owned public utilities, gas, electricity, and water for example, a rise of wages can usually be passed on

to the consumer. If, however, the demand is very elastic, the effect of the high wages on unemployment will be serious.

In the case of the export trades it is impossible to maintain wage rates above the competitive level, because, unless foreign competition is non-existent, the industry has to sell its products at a world price, and the high wages encroach on normal profits. Unless wages are reduced the weaker firms must go out of business and unemployment follows. Except where the particular industry contributes the major portion of the world's supply, which is seldom the case, any reduction in its output would have no influence on world prices. So long, therefore, as wages remain above the competitive level, the size of the industry must progressively shrink.

In concrete instances the effects will vary with the nature of the industry. If the proportion of labour to fixed capital charges is relatively small, the effects of high wages on unemployment will be less severe than in those cases where this proportion is reversed.

If the wages paid in any industry or industries are below the competitive level, the employers receive an additional profit. In such a case there is a tendency for new firms to open out so as to take advantage of the extra profits made possible by the cheap labour, and in the long run, this would have the effect of increasing the demand for labour and thus raising the wages in the manner described in a previous section.

But it does not follow in practice that this would always be the case. New competitors would not be drawn into the industry unless all the facts were known, and employers paying wages below the normal would conceal this fact as far as possible. In the long run, however, there would be a strong tendency for new industrial recruits to avoid such trades and the supply of labour would shrink. In these days, of course, industries which tend to pay wages below the competitive level are regulated by Trade Boards.

If, instead of just one or two industries, the wages of a country as a whole are forced above the competitive level, similar results follow, but on a larger scale. Articles produced for the home market would rise in price, but not uniformly, because the proportion of labour to total costs varies from industry to industry. Articles produced for export could not rise in price unless world prices rose.

Production for the home market would be dislocated because some branches of production would be less remunerative than before ; industries in which labour costs were high would resort to more capitalistic methods and some unemployment would follow ; while in the export trades, because prices could not be raised, profits would fall, productive capacity would be reduced, and large numbers would be thrown out of work.

It follows from what has been said above that the power of trade unionism to fix wages above the competitive level is very limited. A single union may do this in exceptional cases by throwing the burden on to other workers ; a general rise of wages above the competitive level can only be forced by trade unions at the cost of widespread unemployment.

21. Minimum Wages

The effects of a minimum wage above the competitive level have already been examined. The term minimum wage, when fixed by the State, however, is usually applied to the very badly paid occupations. In such cases, a State minimum wage may not injure the workers concerned through increasing unemployment. All employers would be affected similarly so that it is likely that the burden would be passed on to the consumers in the form of higher prices. Experience has shown that the products of many "sweated" industries will stand slightly higher prices.

Secondly, where wages are too low to provide for an adequate standard of physical and mental efficiency, higher

wages may well lead to higher productivity, so that whether product prices can be raised or not, the real cost of labour to the employer is no more than before. Again, if the employers of an industry, before the minimum wage was enacted, had been making high profits, that is to say, if they had been exploiting their workers, the higher wage would give them no incentive to curtail their demand for labour.

There is, of course, another side to the picture. If profits in an industry were at a minimum, and if product prices could not be raised in face of foreign competition, the demand for labour would be reduced; the older men, and the less efficient would be probably discharged; those remaining in employment would enjoy higher wages than before, but they would probably have to work at greater pressure. It is doubtful if minimum wages were an advantage to the older and less efficient men before the days of unemployment insurance.

A State minimum wage that applied to all industries would have more serious results. Men who could not earn the minimum wage would be discharged, and must remain permanently unemployed. The burden of making the necessary provision for them would fall upon the taxpayers. The State could not decree that all prices of products should be raised in proportion, and at the same time force the consumers to purchase as many products as before. Even if it could do that in the domestic market, it could not exert any compulsion on foreign buyers. The position would be further complicated by the fact that increased taxation for the maintenance of the unemployed would probably lead to a shortage of capital, a fact that would react adversely on the workers.

22. High Wages and Efficiency

High and low wages are meaningless terms except in relation to output, and it is often argued that, apart from the fact that high wages can only be paid for high efficiency, high

wages tend to promote higher efficiency, *i.e.* the increased cost is more than counterbalanced by the increase in output.

Now in cases where wages paid are inadequate to maintain the worker in a state of mental and physical efficiency, the proposition is true, assuming that the extra money is devoted to necessities for efficiency in some form or other. But the upper limit of this tendency is soon reached. Beyond a certain point, increases of wages are usually spent on things that have no necessary connection with efficiency at all.¹

It is sometimes suggested that higher wages will incite the worker to put forth greater efforts, and in many cases this is doubtless true, but it is not a proposition universally valid. There is a wide margin within which workers can be driven to give off the maximum irrespective of the question of wages. This is particularly true where wages are above the competitive level, and it has been proved by experience that the wages or salaries of teachers and civil and municipal servants can be raised or lowered, within limits, without any appreciable reactions on efficiency.

On the other hand it has been argued that a reduction of piece-work rates will make a man work harder in order to maintain his conventional standard of living, but, while this may be correct in individual cases, the balance, on the whole, inclines in the other direction.²

The theory of high wages, however, has another aspect. It can be applied to the entrepreneur class as well as to the employed. Some employers can stand the strain of high wages because they can use their resources to the maximum advantage. If, therefore, all entrepreneurs have to pay

¹ Lowering the salaries beyond a certain point would affect future supplies of labour, but that is not the point at issue here.

² This point has been applied to low rates of interest as a stimulus to saving; Marshall: *Principles*, and Clark: *Essentials of Economic Theory*. It was also argued in eighteenth century France that high taxation stimulates production. The theory may be true in individual cases but it is not a general rule.

high wages, production tends to be concentrated in the hands of the most efficient employers.

23. The Effects of Inventions on Wages

The direct effects of inventions on wages depend on whether they increase the productive capacity of labour and at the same time reduce the cost of accessory factors, or not. If a new and less costly machine will double the product of labour, a given output will be produced by a unit of labour at less cost in interest charges. Inventions of this kind, therefore, are very favourable to the level of wages.

On the other hand, some inventions only allow the product per unit of labour to be increased at greater expense with respect to accessory factors. The new machinery required for a higher product per unit of labour may involve greater interest on fixed capital. In such cases the favourable reactions on wages due to greater productivity per unit of labour may be balanced by increased interest charges.

The above conclusions can be stated in a slightly different form. Technical progress may alter the relative marginal productivity of labour and capital according as an invention tends to economise labour or to economise capital. An invention that reduces the demand for labour, *i.e.* a labour-saving invention, has, or at least may have, the effect of making labour superfluous, in which case, with the supply of capital taken as fixed, diminishing returns accrue to labour. In a similar way an invention which reduces the demand for capital may place capital under diminishing returns.

In practice, probably few inventions are either wholly labour-saving, or wholly capital-saving: the majority tend to economise the use of both capital and labour, but not in the same proportions, so that particular inventions may have unfavourable reactions on wages in the short period.

In the long run, technical progress, as experience has proved, is not likely to injure real wages. Inventions

increase the size of the National Dividend because, as they decrease the quantity of resources required to produce a given output, means of production are liberated for employment in other fields.

The problem, however, is more complicated than may appear on the surface. Distributive shares received by the factors of production can be considered from an absolute, and from a relative, point of view. Technical progress may raise the absolute share of the National Dividend received by labour, and yet lower its relative share; in other words a greater proportion of the gains may be appropriated by capital. What is likely to happen in the future under modern conditions is difficult to say. With the working population relatively stationary, if capital increases at a greater relative rate than the effects of inventions, the relative distributive share of labour may increase, but as the opposite conditions are likely to prevail some authorities take the view that the relative share of labour is likely to decline.¹

24. The Wages of Women

In most cases, a woman is paid less than a man for similar work, and for this there are various reasons. To some extent this is due to the force of a custom that reaches back to a remote past. Until comparatively recently, woman was a drudge, and even to-day she tends to crowd into the drudgery and worse paid occupations, where her force of numbers helps to keep down her wages.

Secondly, women are much less inclined than the men to enter into militant organisations for the purpose of forcing up wages. A large number of women are not wholly dependent on their earnings; they are partly supported either by their parents or by a husband. This class may be in a minority in these days, but it is a

¹ For a penetrating analysis of these problems the reader should consult Hicks's *Theory of Wages*.

minority that competes for employment, and its competition tends to force down wages in certain occupations. In some occupations, where wages are determined more or less arbitrarily, a lower wage for women has often been justified on the grounds that man has greater social responsibilities.

But the most important reason is that over a long term of years the average man is probably a more reliable machine than the average woman. For man, commerce or industry is a permanent vocation; they are not permanent vocations for women in a large number of cases. The average man can stand the nervous strains of industrial and commercial life better than the average woman; he is less liable to breakdowns. Over a short period of time, a woman may do a piece of work as well, or even better, than a man; but in the long run, man is probably a more reliable machine.

25. Industrial Strife

Actual wages are reached through struggle between employer and employed. To some extent the owners of all the factors of production have a common interest in increased production; if the product to be divided is greater, each participant may expect a greater share. The actual proportion in which a given amount is distributed is not decided so easily as theory would suggest. Each person tries to take advantage of prevailing conditions to raise his earnings; sometimes he tries to stimulate competition, but often he realises that economic friction will prevent the action of tendencies unfavourable to him.

The ease with which employers combine was noticed by Adam Smith. "Masters are always and everywhere in a sort of tacit, but constant and uniform, combination, not to raise the wages of labour above their actual rate." To-day the trade unions are equally effective. The last resort of the trade union is the strike; that of the employer

is the lock-out. Moral considerations cannot be fully discussed here ; workmen claim the "right to strike," but this question involves great difficulties. In the early days of unionism the law definitely sided with the employers against the men, but the balance has been redressed. To-day it is realised that the objection to strikes is moral rather than legal ; the economic activities of individuals affect the happiness of the community as a whole ; a strike may cause widespread misery far beyond the bounds of those immediately concerned.

The early trade unions were attacked as being in "restraint of trade," and were criticised by many economists as interfering with the free play of supply and demand. In fact the unions were necessary because employers' combinations had first interfered with such freedom, and the workmen attempted to obtain the wages which would have been paid under free competition. A strike, or the threat of one, may hasten the payment of wages to which men are entitled, and which they would obtain in time. When general prices are rising, manufacturers often make big profits ; in these circumstances unionism may often obtain immediate payment of better wages. When there is a temporary increase of profits the employer tries to keep the whole, and may do so if economic friction is strong enough. Strikes may overcome such friction.

Such friction exists in times of stationary prices. For long periods an employer may pay wages below the marginal net product ; if competition worked unchecked, these wages would be raised. If a strike takes place the employer may be obliged to forego his excess profits.

26. Strikes

Strikes are widely supposed to be the means of obtaining far higher wages than would be obtained under free competition. Thornton, from his conclusion that "labour will not keep," drew the result that labour for that reason suffers

a disadvantage in bargaining. An employer is usually rich enough to bear a spell of idleness, if necessary, or at least a period during which production covers no more than prime costs. The reserve of a workman is normally small ; he dare not withhold his labour. If labourers are banded together in a strong union they can bear a spell of idleness as well as the master.

It seems, however, that the efficacy of strikes has been greatly overrated. Apart from the direct loss occasioned through stoppage of production, a rise of wages which is actually extorted may have been inevitable when competition had slowly done its work. The " keeping " of labour cannot seriously affect the demand for it ; hardware may be kept indefinitely, but if all salesmen agreed to hold back hardware for a price above the competition price, the pressure of new supplies would force down the price ; if new supplies could be held back, and a temporary excess profit were made through the fact that a few buyers would give very high prices, the extraordinary demand would soon be satisfied ; a little gain would have been made at a great cost.

A powerful union might raise wages greatly above the competitive level, but the results would probably be disastrous. Unemployment would increase either through contraction of output, or through the substitution of capital for labour.

In certain special circumstances a small group of men may permanently obtain a higher wage than would be obtained under free competition. If a householder lost a key he would be willing to pay a relatively high price for a new one ; its value is very small compared with the value of the contents of the house. Similarly, if a little specialised labour is absolutely necessary in the production of a valuable commodity, *i.e.* if there are no substitutes for it, the specialised workmen may strike successfully, especially if a check to production of the final commodity

leads to a large rise in price. The gains may be kept permanently only if the workmen in question are organised in a strong union which is able to limit its numbers effectively.

A trade union's position is very strong where an employer or a group of employers use much expensive fixed capital. In such cases a strike is a very serious matter for the employers for they have heavy interest charges to meet on fixed capital that is standing idle. In the short run, the mere threat to strike may enable the trade union to squeeze the employers' profits. But in the long run, as fixed capital wears out it will be either not replaced at all, or it will be replaced with capital of a form that requires less labour. In either case there will be a tendency for unemployment to increase.

On the relationship between trade unions and strikes, opinions differ. On the whole, however, experience suggests that, where masters and men are highly organised, strikes are less likely to occur. Union leaders do not, as a rule, favour the strike policy except as a last resort, and they can settle many differences by negotiation. Strikes are not always a question of wages: frequently they have their first origin in other grievances which are more likely to be settled amicably by organised than by unorganised labour.

On the other hand, as Dr. Hicks has pointed out,¹ unionism as a militant organisation is a potential danger to industrial peace, as armaments are to political peace. There is always the tendency to use the weapon to test its efficiency and to justify its existence.

27. Conciliation and Arbitration

It is to be hoped that strikes are a temporary phenomenon which will give place to saner methods of obtaining satisfactory wages. These methods are Conciliation Boards and Joint Industrial Councils on which masters and men

¹ See Hicks: *Theory of Wages*, Ch. VII. The theory of strikes and unionism is discussed in detail there.

are represented. Conciliation Boards have done excellent work, particularly where the Chairman is absolutely independent and a man of outstanding personality.

It is doubtful, however, if machinery of this kind can eliminate strikes entirely, because it is difficult to remove from the minds of trade unionists the feeling that their leaders concede too much.

Arbitration is not very popular with either class of disputants in this country. Each party has to run the risk of obtaining less than it might have done by a strike or lock-out policy. Arbitration is successful where the arbitrator can convince both sides that they have more to gain than to lose by accepting his solution. Needless to say, this is possible only when the arbitrator commands the confidence of both parties.

It is sometimes argued against arbitration that in practice the arbitrator usually takes the mean between the conflicting claims. There is an incentive, therefore, for each side to claim more than it can reasonably expect to gain. Where this applies, a demand by employers for a reduction of wages may not always lead to a just award.

28. Unemployment

Unemployment is a result of the maladjustment of productive factors. In a stable condition of industry, economic friction is so powerful that a workman may take years to settle into the place for which he is most fitted; "square pegs in round holes" are too common. When industry is continually changing its form the problem of satisfactory settlement becomes yet more difficult. Unemployment is not always due to inefficiency: it may happen when a man has been doing work for which he is unsuited. Economic friction is thus a permanent source of unemployment.

Trade tends to run in cycles: an obvious example is that of the annual economic movements which depend on

the harvest ; on the whole, trade is better when the harvest is gathered. Some trades are seasonal ; *e.g.* builders are least busy in winter. There are also larger and longer periodical movements which take place at intervals of a few years, which are known as trade cycles ; spells of good and bad trade alternate. In good times, overtime is worked, but the increased production usually necessitates the employment of more labour. Thus the amount of labour in use in good times is superabundant ; in bad times partial employment of most workmen and actual unemployment of some must then occur. The less efficient are no longer required.

Other changes occur which are not periodical. An article may suddenly drop out of fashion, or an important trade may lose a large foreign market through a new tariff or other changes. Unemployment in certain trades is thus generated.

Unemployment is increased by the system of casual labour in use in dockyards and similar places. There are many men of low physique, intelligence, or industry who are forced into, or prefer, casual labour to steady employment. Such men must live by taking advantage of the limited employment offered ; if labour is employed by chance methods a large number of unsuitable men may attend at a dockyard in the hope of obtaining employment. At certain busy times all will be required ; at other times all the men who are employed when the work is greatest will be liable to compete for the limited employment. Thus a very large number of men are continually competing for employment which requires only a proportion of them.

Unemployment is sometimes caused by trade-union action, though the unionists claim that the ultimate results are favourable. After a successful strike the wages may be forced up beyond marginal net product, and the inefficient will be dismissed, unless the unions can

temporarily prevent it. Again, the successful claim to a minimum wage has the same effect, if the least efficient workers cannot earn the minimum.

Unemployment may be caused temporarily by the sudden introduction of forms of fixed capital which can displace labour. The Luddites of last century have been accused of short-sightedness for their opposition to machinery, but the effect in their case was undoubtedly widespread unemployment. The country as a whole gained by the change; even the working classes gained in the long run, but there was a period of suffering. The "lump of labour" theory is well illustrated by this example: workmen tend to believe that the amount of employment is fixed, and that some men are sure to be under-employed if other men are working overtime, or if machines displace human labour. For very short periods there is some truth in the argument; for longer periods the lowering of the price consequent on the increased production by more efficient methods calls forth further production which will ultimately absorb the displaced labour.

At the same time it must be remembered that the new technical methods, and the new industries which these methods bring into being, may demand a different quality of labour from that which is displaced. The older, and less adaptable men, may be either permanently unemployed or forced into the ranks of less skilled labour.

The remedies of the disease must follow on the analysis of its causes. Economic friction can be partly removed by efficient and well-organised labour exchanges, which must receive the confidence of employers and employed. The present exchanges have been strongly criticised as inefficient, but they will doubtless be improved as the result of experience. Casual labour should be reorganised; labourers should be accepted in the order of their efficiency, or an advantage should be given to regular men. The

excess labour would thus be discouraged. If a man knew he had no chance of work, he would cease to compete for casual employment. In this way the status of the remaining labourers would be raised. To lighten periodical difficulties the State and municipalities should carry out their schemes of road making, etc., in times of depression. Employers should distribute under-employment among all their men, that is, they should put all their regular (not casual) workers on short time, so that no one would be wholly unemployed. There will still be a residue: to some extent this can be met by insurance; the hopelessly unemployable should be treated in labour colonies or other special institutions.

- REFERENCES. Dobb: *Theory of Wages*.
Henderson: *Supply and Demand*.
Hobson: *Industrial System*.
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Wicksteed: *Common Sense of Political Economy, Vol. I*
Wicksell: *Lectures on Political Economy*.

CHAPTER XIV

INTEREST

1. Usury

The payment of interest for the use of money dates back to very early times ; usury has persisted in spite of powerful opposition. The medieval attempts to abolish usury failed, for when borrower and lender alike wished to carry out a transaction the law could usually be evaded. The persistence of usury throughout civilised experience makes it clear that there is a deep and abiding cause for the existence of interest.

Usury in former ages was rightly regarded with disfavour. In early medieval times there was little opportunity of using large stocks of borrowed capital to further trade or production. The man in temporary dire need of money was usually a poor man in distress, a spendthrift, or a landowner with ample possessions who required actual money to tide him over a temporary difficulty. If security for repayment was complete, the requirement seemed, not unnaturally, to savour of greed. Men could understand the desire for payment for the use of goods which gave continuous satisfaction, or for money when there was a risk of loss ; they considered, however, that money in itself was "barren," and that the lender should claim nothing beyond the actual money he lent.

Yet men insisted on paying interest if they could not otherwise borrow money: the desire for loans was so insistent that the laws against usury were deliberately made of no effect by lawyers themselves ; legal fictions were invented under cover of which money could be lent at will. As production grew and commerce developed, the new era saw the growth of a class of merchants and, later,

of manufacturers, whose habits of thought rendered them impatient of artificial restrictions suitable to a less enterprising age; such men needed money in abundance and found little difficulty in obtaining it.

It became clear to the eighteenth-century thinkers that the legal prohibition of usury had outlived its usefulness, and that the modern demand for money was based on the sure instinct of its necessity to a developing industry. In early times the usury laws had actually been a cause of a rise in the rate; lenders wished to cover risks of detection; in the eighteenth century the laws were merely neglected. Later, Bentham showed the folly of attempting to control economic forces so strong that all laws were evaded; in 1854 the laws were abolished.

2. The Nature of Interest

There are numerous theories of the nature of interest, but, as Taylor points out, most of them are ultimately less divergent than appears at first glance.¹ Their differences are rather a matter of emphasis of special aspects than a question of errors. As Wicksteed² shows, there is no necessity to enter the industrial world to ascertain the reasons why interest arises. The main characteristic of interest can be disentangled by a study of the private individual.

The necessity for borrowing arises from the fact that our incomes do not accrue in uneven waves that correspond with our expenditures, but in a steady stream at regular intervals. Expenditure, on the other hand, falls into two classes—payments for goods that are immediately consumed, usually small regular amounts, and larger or relatively large payments for goods which are consumed only slowly and require to be purchased at irregular intervals.

¹ Taylor: *Principles of Economics*, p. 470. Taylor classes interest theories as Use and Exchange theories.

² *Common Sense of Political Economy*.

Let us suppose, for example, that a man starts life with nothing in hand and that he knows that his total life-time's expenditure will amount to £5,000, and let us further suppose that his total earnings for that period are certain to be £6,000. His life-time's earnings will more than balance his life-time's expenditure, but as we saw above, income and expenditure seldom synchronise in any short period. In some short periods his income will be greatly in excess of his expenditure; in others, the contrary will be the case, for he may be required to purchase a house, extend or renew his furniture, educate his children, and so on.

He could, of course, postpone these purchases until he had accumulated the necessary savings, but only at the cost of great inconvenience. It would be an obvious advantage to him, therefore, if, during those periods when income was below necessary expenditure (and incidentally, in the case of a private individual, those periods are more likely to occur in the early than in the later years of his life), he could bring forward into the present a part of that income he expects will accrue to him in the future.

And a little reflection will show that this advantage would be worth paying for. If he could so redistribute his life's income that it correlated perfectly with his expenditure, he would probably gain a greater utility than was possible before, even if he paid his balance of income over his expenditure, *i.e.* £1000, for the privilege.

Now let us suppose a second individual starting life with his total future expenditure as cash in hand. He could not, for reasons that need no explanation, purchase the necessities of a lifetime in bulk; a part of his capital must therefore remain idle. He may, contrary to our first man, rate future goods more highly than present ones, or like him, place more value on present needs. Various hypothetical possibilities are open. One thing, however, is beyond dispute, and that is that a given sum of money, up to a certain limit, occupies a lower position

on his scale of preference than is the case with the first man. We can express this fact in two ways. We can say that his wants are less pressing because he has in hand the means to satisfy them, or we can say that the marginal utility of money is less to him because his total supply is greater.

Should these two men meet, then, the conditions for exchange are present. We have already shown that the first man can borrow with advantage; the second man might lend with advantage¹; he could certainly lend without disadvantage.² In the great majority of actual cases, the desire to lend will be less keen than the desire to borrow; hence the borrower must pay over some inducement in order to bring the desire to borrow and the desire to lend into equilibrium. This inducement is what we call interest.

Two facts are revealed by the above analysis. In the first place, while it is true that, in the industrial world, productivity of capital is inseparable from interest, interest can arise without any question of productivity being involved. Secondly, while it is again true that, to our borrower, present wealth is more valuable than future wealth, borrowing and lending arise because immediate wants occupy different relative positions on the scales of preference of different individuals.

3. Interest in the Industrial World

In the industrial world of a specialised society, saving and borrowing assume a different form, and are for a different purpose from that of the case we have just considered. Savings are mainly embodied in improved tools and methods of production;³ borrowing takes place because

¹ If there were no banks, he would be relieved of the trouble of safeguarding a part of his capital.

² It is theoretically possible that the desire to lend may equal the desire to borrow. In this case interest would not arise.

³ The savings deposited at the bank are invested in industrial enterprises through bankers' loans.

these improved tools and methods promise additional increments of wealth. In other words the question of productivity of capital now enters: apart from that, the elements of the problem remain unchanged.

It can and does happen that the individual who does the saving, also uses the capital equipment in production, but much more generally some persons do the saving, and others apply these savings, embodied in tools or improved methods, to the purposes of production. A little reflection will show that borrowing and lending can confer benefit on both parties. The borrower borrows from people who are in a position to transfer part of their income from the satisfaction of immediate wants with less inconvenience than he would suffer if he had to make the saving himself. On the other hand, he is in a position to make these savings yield a higher return than if they were retained by the lender and employed by him in any other alternative way.

If, therefore, the borrower makes over to the lender anything less than the additional increment of wealth created by these applied savings, he has made a clear gain; and the lender has done likewise¹.

It follows from the above that in the industrial world interest arises from the productivity of capital. That capital is productive, and that it is an independent factor in production, have already been demonstrated in an earlier chapter. It is true that the origin of capital can be traced back to labour and land, but in the analysis of interest we are concerned only with capital as an empirical fact.

Now the productivity of capital can be explained on various grounds, but, speaking broadly, it allows the time element to enter production, that is to say, the application of land and labour to more distant ends than the production of commodities for immediate consumption. In other words, capital allows the time structure of production to

¹ Otherwise the lender would have used his capital in some alternative way.

be lengthened and the process of manufacture to be carried on in a series of specialised stages, conditions which lead to a great increase in the total output of products. The total contribution of capital to the total product cannot be ascertained any more than the total contribution made by labour or land, but at the margin of use capital can be substituted for current land and labour. Wicksell therefore defines interest as the difference between the marginal productivity of saved-up labour and saved-up land, and the marginal productivity of current labour and land.

Wicksell's explanation thus closes the circle partly traced by Wicksteed; for the latter, as a rule, is only indirectly concerned with purely industrial relations.

4. The Necessity for Interest

It is obvious that, in the industrial world, interest could not be paid permanently unless the capital was productive; productivity explains why interest can be paid, but not why it must be paid. The reason why interest must necessarily be paid is because capital is always scarce relative to the demand,¹ and to restrict the demand for capital, a price for its use, *i.e.* interest, must be paid in exactly the same way as a price must be paid for the use of other types of resources. In every case the economic function of price is to restrict the demand to the supplies available.

Now if capital relatively scarce is applied to one purpose alternative uses must be foregone; interest therefore decides into which channels the available supplies shall flow. In this way the supply of capital is apportioned between

¹ The fact that at times many investment societies discourage deposits and banks often pay a very low interest on deposits, does not refute the general truth of this proposition. At no time, up to the present, could the loan fund of a nation stand the strain of all the demands for useful purposes that would be made upon it if interest were non-existent.

the competing demands of alternative uses, and those which promise the highest future return receive the first consideration.

It might be objected that interest does not necessarily distribute capital among the uses most socially necessary in the ethical sense, and that capital required for the housing of the working classes may be deflected by the force of interest into the liquor trade for example ; but the scope of the subject as defined in Chapter I rules such considerations out of discussion. Apart from extreme cases, however, this indirect distribution probably leads to greater economic advantage than any other possible system, at any rate within the limits of a competitive society.

Even in a socialist state, so long as capital remained scarce relative to demand, interest, as a selective principle between possible uses of capital, would probably prove necessary though the form of it may be disguised.¹

5. The Rate of Interest

If interest is the mechanism by which a relatively scarce supply of capital is apportioned between competing alternative uses of capital, it is evident that the rate must be such as will restrict the demand to the available supply, as in the case of any other price. The causes that determine the accumulation of capital have been discussed elsewhere, and so need not detain us here. It was formerly accepted that the rate of interest must be such as will just induce the marginal saver to enter into the supply, and as his savings were believed to represent a real cost in the sense of painful efforts, it was held that these real costs to the marginal saver determined the rate of interest.

But the real cost theory is no more valid in the case of the rate of interest, *i.e.* the supply of capital, than it is in the case of ordinary manufactured goods. If the rate of

¹ See Cassel: *Theory of Social Economy*, and Henderson: *Supply and Demand*.

interest at any time falls so low as not to be worth its "cost" at the margin, that is, if saving affords a smaller satisfaction to the lenders than some alternative use for their income, the supply of capital will shrink, and on the contrary assumption it will expand.

The old real-cost theory graded capitalists in much the same way as it graded business and land in order of efficiency; hence the marginal saver appeared as the working man who could only be persuaded to abstain from present expenditure by a certain rate of interest. All, however, that we have said with respect to the marginal business firm, and the marginal land, applies to marginal savings. A fall in the rate of interest may drive out of the supply the least "efficient" saver, *i.e.* the man or class who saves under the least favourable conditions, but indeed, as we shall see presently, it is just as likely that someone higher up the scale will go out of the supply first.

As a matter of fact, cost in any sense has probably less influence on the supply of capital than on the supply of anything else. The reason is that in modern times, in a rich society at any rate, a good deal of saving is automatic, and arises from the fact that income is in excess of current needs.

This is obviously true in the case of the rich man, but within limits it is equally applicable to all classes in anything approaching comfortable circumstances. It is true, of course, that all of us except a Rockefeller have desires beyond our incomes, but in practice our expenditures are largely governed by class conventions, and until income mounts beyond the level of one class to that immediately above, any rise of income is automatically saved.¹

¹ It is easy to point to exceptions to this tendency, and the lower we come down in the scale of income the more numerous are the exceptions, but even with respect to the lower middle classes the generalisation contains a good deal of truth.

In any case it is the amount of the supply relative to the demand that is the all-important fact. How the supply came into existence has no effect on the price of capital. An addition to the supply of capital that came from nowhere, would have precisely the same effect on the rate of interest as if the increase were due to rigid self-denial on the part of the saving section of the community.

Given a supply of capital, then, the rate of interest must be determined by the demands competing for its use. If the supply of capital is less than sufficient for all the demands made upon it, some demand must necessarily be abandoned. The rate of interest therefore measures the loss to the community of this abandoned demand.

In a competitive society based on private enterprise, this foregone use would not necessarily be a social use: it might be the least profitable business undertaking.

6. The Rates of Interest on Long- and Short-Term Loans

In the section above, the rate of interest was discussed from a general point of view only. In the real world there are many kinds of loans to each of which is attached a distinctive interest rate. These loans fall into two broad classes according to the length of time for which they are made. Long-term loans may be permanent loans, Consols for example, or repayable after a term of years, as in the case of municipal corporation loans. Other examples of long-term loans are company debentures and mortgages on real property. Short-term loans are repayable in a short period, usually two or three months. Bills of exchange and Treasury Bills are familiar examples of short-term loans, but there are many ways of making a short-period loan. In theory, bank overdrafts are short-term loans, but in practice they are usually renewed. The shortest period loans are bank deposits repayable on demand, or at a few days' notice. Such deposits are equivalent to

money, so that the shorter the period of the loan, the more nearly does the asset acquire the character of money.

Speaking generally, interest rates on long-term loans are higher than the rates on short-term loans, and for one very good reason. The longer the period of the loan and the greater is the risk of loss incurred by the lender. In some cases there is the risk that a long-term loan might not be repaid when it falls due; in all cases there is the risk of loss if the security has to be realised in the open market at any time.

It is possible for long-term rates to be lower than short-term rates of interest if the investing public has a high degree of confidence in the stability of future conditions. In that case long-period loans would appear relatively attractive, as the inconvenience of having to make continual changes in investments would be avoided, and the risks attached to immobilising resources for a long period would appear to be slight. Such conditions, however, seem to be of the past, rather than of the future.

Short-term interest rates fluctuate more widely over a period of time than long-term rates do; one reason for that being that changes in the rate of interest normally begins in the short-loan market. In normal circumstances the real rate, as distinct from the nominal rate of interest on long period loans, tends to rise or fall in sympathy with changes in the rate for short-term loans. If the rates of interest in the short-term market rise sharply, there is a tendency for investors to sell their long-term securities and transfer the proceeds to the short-term market. This increase in the amount of long-term securities offered for sale in the market lowers their capital value and raises the real rate of interest yielded by them. Movements of interest rates can take place in opposite directions. If an international political crisis caused a wholesale movement of funds from the long-term to the short-term market, the

long-term rates of interest would rise, and those in the short-term market would fall.

7. Some Peculiarities of the Rate of Interest

An increase in the supply of capital would tend to lower the rate of interest in the short period, as less productive demands, previously excluded, would absorb the new additional increments. Over a longer period, the pressure of these lower demands may exert an opposite tendency.

In an industrial society, however, based on private enterprise an absolute decrease in the supply of capital may be accompanied by a fall in the rate of interest. This would happen if, for some reason or other, the supply of capital shrank at a time when the openings for the profitable employment of it had diminished in number. An absolute decrease in the supply of capital would be thus consistent with a less degree of relative scarcity than before.

Concrete cases are very complicated. Wicksell draws attention to the fact that it is only when industry is saturated with capital that it is absolutely certain that an increase in the amount of capital applied will reduce the rate of interest and raise rents and wages. On the other hand, if the increase in capital takes place in a period of great technical progress the distributive share of capital may increase while the shares of labour and land may decrease. This, however, is really in agreement with what has been said above. The technical conditions of industry may be such as to allow an equal, if not more than proportional, displacement of current land and labour.

Interest rates are very susceptible to changes in public opinion. If the general expectation is that prices will rise sharply in the future, investors will be more inclined to buy ordinary shares, the income from which depends upon profits, than fixed income bearing securities. The price of fixed income bearing securities will fall so that the rate of interest yielded by them will rise. The anticipated, or

actual, rise in prices will raise the short-term interest rates as business men will seek to borrow in the hope of making windfall profits from the rising price level. On the other hand, the rise in the price of ordinary shares may lower the rate of interest on the capital invested in them. What would happen in any particular case would depend on the profits made by the enterprise.

If a fall in prices is generally expected the rates of interest in the short-term market will tend to fall because the demands of business men for loans will fall away; capital will begin to flow from industrial securities to fixed income securities. The rate of interest yielded by bonds will fall. The prices of ordinary shares will fall, but how the rate of interest on capital invested in them will behave depends on circumstances. If profits remained fairly stable the interest yielded by the shares would rise. Falling prices, however, usually mean falling profits, so that the fall in the price of the shares would be likely to be offset, and in some cases more than offset by the fall in profits. The interest yielded by capital invested in ordinary shares would remain either relatively constant or fall. In a depression the interest yielded by an ordinary share might fall to zero if no profits at all were made.

It has often been stated that, with the progress of civilisation, the rate of interest must continually decline, but this is not necessarily true. It is not the absolute but the relative supply of capital that decides the rate. If the absolute increase in the supply of capital occurs at a greater rate than the opportunities for the profitable employment of its use, the rate will gradually fall; on the other hand, if these opportunities increase in a greater ratio than the supply of capital, the rate of interest will rise even though an absolute increase in the amount of capital has taken place.

That a rise in the rate of interest tends to stimulate saving is beyond dispute; on the effects of a fall in the rate of interest on saving, opinions are divided.

If a person is on the margin of doubt as to whether to save or to use his surplus income in some alternative way, a fall in the rate of interest would probably suffice to render the alternative use the more attractive and to drive him out of the savings supply, as Marshall affirms. But for one very strong reason this is likely to be someone well up in the scale rather than the marginal man in the sense of the saver saving under the least favourable conditions. The poorer a person is, the more likely he is to save for a purpose independent of the rate of interest as a direct motive, that is for an income adequate to the needs of his old age, or for the future education of his children. Now if the rate of interest is reduced, it is clear that the desired income can only be furnished by a greater accumulation of capital; hence a fall in the rate of interest must tend to stimulate increased saving among certain classes at least. Such cases may have been of secondary importance when Marshall first wrote, but they are certainly not negligible to-day. To say the least, these persons are not likely to be the first to leave the savings supply with every fall in the rate of interest.

8. Changes in the Rate of Interest

A general rise in the rates of interest can only be brought about by a relative scarcity of capital. In the short period the relative scarcity is most likely to be caused by changes from the side of demand. If business men anticipate a trade revival the short-term rates of interest will tend to rise; they will also rise if new inventions open up new fields of profitable employment for capital, or if business is made more profitable by a fall in wage rates. The short-period interest is frequently affected by the policy of public authorities. Government borrowing for various purposes will send up the rate of interest.

Short-period interest rates can be raised by factors working on the side of supply. In some cases a bad harvest

will send up interest rates; a rise in the income tax will have a similar effect, and so would a shortening of the working day, as output would be likely to be curtailed for a time.

Conversely, interest rates in the short period may be lowered by expectations of a trade depression; by inventions and methods that economise the use of capital; by a series of "bumper" harvests, and by a general rise of wages.

In these days of political insecurity the short-period interest rates are strongly affected by the international situation. An international crisis is likely to check the demand for loans very considerably, and to cause some rates to fall sharply. On the other hand, it may reduce the amount of capital offered in the loan market, and in that case some rates of interest would rise.

In the long period the rate of interest is largely determined by changes in the size of the population, and by changes in the time preferences of the individuals of the community, that is to say, the changes in preferences for present or future goods. Other things remaining equal, an increase in the population will tend to force up interest rates; conversely, a fall in the size of the population will tend to lower them.

It has been suggested that it is the expectation of living on the part of those who prefer future satisfactions that is the determining factor in the rate of interest over a long period. Most people expect to live somewhere between twenty and fifty years of age, and that expectation tends to fix the long period rate of interest between the limits of five, and two per cent. A lengthening of the average expectation of life will tend to lower the rate of interest. Another factor of great importance is the uncertainty of the course of future events. The greater the degree of uncertainty and the stronger is the tendency to a high rate of interest. These two factors may either support each other, or offset each other, according to circumstances.

9. Possibility of a Zero Rate of Interest

Mill believed that interest showed a tendency towards a minimum, which might be very low. He realised the great growth of capital; in modern speech, the growing wealth of the country might lead to a large increase in savings and thus of capital; thus the marginal utility of capital might become very low. This seems unlikely: past history has shown such tendencies towards minimum interest, but the rate has never fallen for long below about 2 per cent. The explanation is found above; a low rate discourages saving, and stimulates the demand for capital; capital finds new productive uses as it becomes more abundant; modern industry is insatiable.

A zero rate is theoretically possible; if saving were the rule, and wants did not develop so quickly as capital, it might occur that no employer would accept any form of capital even if its use was offered free; industry would have absorbed all it could economically use. If the process continued, capital might become such a drug on the market that men would have to be paid to take care of savings; interest would then be negative as sometimes in the past. There are no signs of approaching this state; even the enormously increased savings of England to-day are insufficient to satisfy industrial demands; thus the owners of capital continue to claim a very large share of the national dividend.

The reason for this is that if the marginal utility of capital is to fall to zero, the community must save a high proportion of its income. But the community is made up of individuals who vary considerably in their attitude towards saving. Now if one saves less, another must save more in order to redress the balance, and in the present state of human nature it is extremely improbable that the balance could be redressed. Secondly, the possibilities of technical progress are not exhausted; productive methods have not yet reached their maximum, and that condition

must be fulfilled before industry can be saturated with capital. Technical progress is a factor that limits the fall in the rate of interest. Even if the marginal utility of capital for industrial purposes fell to zero, the demands for capital for social purposes would still have to be met, and these demands are likely to increase rather than diminish in the future.

10. The Importance of the Rate of Interest

In its broadest aspect, this question has already been answered. More specifically, interest forms part of the theory of distribution, and it exercises a certain definite influence on the course of production.

So far as distribution is concerned, interest is the share of the total product that falls to the capitalist class, and causes that tend to raise the rate of interest usually tend at the same time to lower the rate of wages. Conversely, a fall in the rate of interest is favourable to a rise of the level of wages, other things being equal.

If the degree of relative scarcity of capital increases in a greater ratio than that of labour, the proportionate share of the total product that falls to the capitalist class must increase, and as the waiting power of capitalists is always greater than that of labour, they are in a strong position to enforce their claims. For this reason, a decline in the rate of interest is likely to have less influence in raising wages than a rise in the rate of interest has on their fall ; but on such a wide subject any generalisation must be made with limitations.

The importance of the rate of interest on the course of production is of not less importance than its influence on distribution.

"Roundabout" or capitalistic methods of production are more productive, in the long run, than direct methods. The importance of fixed capital equipment to a modern industrial society cannot, therefore, be over-estimated. A

manufacturer considering the advisability of renewing or extending his fixed plant will be influenced by various motives, and not the least important of these will be the rate of interest on the capital he will have to borrow. If the rate of interest appears higher than the probable value of the additional yield of the new plant, it will not, as a rule, be installed. A lowering of the rate of interest will act as an incentive to industrialists to substitute improved for obsolete plant and to extend their equipment. On the other hand a rise in the rate of interest would have the contrary effect.

Apart from existing businesses, the rate of interest affects the opening out of new undertakings. New firms will only enter into the supply of any commodity when the demand for it at existing prices appears to be in excess of the supply. But a rise in the rate of interest would render the output of these new businesses unprofitable, and unless the price of the product could be raised correspondingly without causing a curtailment of demand, a rise in the rate of interest would discourage the opening up of new enterprises. A fall in the rate of interest would have the opposite effect. Additional capital would be drawn into the trade by new firms until the increased output lowered prices in proportion to the fall in the interest rate, and equilibrium was once more restored.

The rate of interest affects other than purely industrial matters. It has important social effects. Working-class houses, the rents of which are fixed by the wages of the workers,¹ are not likely to be built in quantities adequate to the demand, and they are certainly not likely to be well built, unless the rate of interest is low. The extent to which the State and Municipal Corporations will embark on such schemes as slum clearances, improved water supplies, new schools, etc., is decided largely by the rate of interest.

¹ Apart from State assistance. If rents are too high, more than one family share the same roof.

Apart from the decision to build, the rate of interest influences the type and size of the houses built. Suppose, for illustration, that each room of a house costs £100 to build, and that the rate of interest is 5 per cent. per annum. The interest on the capital invested in a four-room house would be £20. If the rate of interest were only $2\frac{1}{2}$ per cent., £20 would meet the annual interest charges on an eight-room house.

If, therefore, we take rents as fixed, a low rate of interest encourages the building of larger houses; on the other hand, if we take the size of houses as fixed, a low rate of interest means that lower rents can be charged. Similar considerations apply to the use and construction of capital goods in industry.

The above illustrations are merely examples of the influence of the rate of interest on our choice between alternatives, and as such they enter into the administration of our personal and private resources in exactly the same way as they enter into industry. To what extent I shall draw future income into the present, that is, the way I shall distribute the whole of my present and at least part of my future resources, is decided by the rate of interest.

If the rate of interest is low, more of my resources will flow into such channels as a better house and a more expensive motor car, than if the rate of interest is high. This follows for two reasons. If I have ample means at my disposal the satisfactions derived from saving will be less, at a low rate of interest, than the satisfactions derived from an increase in relatively large blocks of current expenditure. On the other hand, if it is necessary to borrow for these expenditures, this can be done with less injury to other branches of expenditure when the rate of interest is low.

11. Gross Interest and its Elements

Gross interest, the payment made by the borrowers to the lenders, is a composite payment. On analysis, it is found to

consist of two principal elements: one of these consists of the trouble and inconvenience necessitated to the lender, for which he rightly demands compensation; the other is the payment for the mere use of the money, and is called "net" or "pure" interest.

In the first element, risk is prominent. To-day, when life is settled and laws are easily and rigidly enforced, risk is a much less important factor than it was in the days when the lender's life or liberty might be in danger at the hands of the borrower. Even to-day, however, large sums of money are lent to speculative entrepreneurs whose ultimate success is uncertain; the loan of money to spendthrifts is relatively much less important than formerly. A lender will require a sum of money to serve as insurance against risk; such risk may be a trade risk, depending on business conditions, or a personal risk, varying with the person to whom the loan is made.

INSURANCE.—Insurance plays an increasingly important part in economic life; the laws of insurance as an element in gross interest are the same as those of life insurance, etc. Uncertainty is so great an evil that cautious people will pay for its removal. By insurance, uncertainty is not merely transferred, but in part destroyed. Loss is not avoided by insurance, but is spread out evenly among a number of people.

Suppose a merchant sends out goods to a place where prices are so much higher that a profit may be made; he will risk loss through the fear of price changes before the transaction is complete, but there will be an equal chance of extra gain. If he wishes a certain profit, however small, he may "hedge"; thus he may speculate on an exchange in such a way that if he loses on his business he will gain on his speculation, and *vice versa*; if his goods rise in price, he will gain on his business and lose equally in

speculation. The net result is that he retains simply his gain which results from difference of price from place to place.

This illustrates the principle of insurance; on rare occasions such self-insurance is possible. If a shipowner possesses one ship the chance of its loss is small, but the result would be so disastrous that his peace of mind is cheaply purchased by the insurance money; a large shipowner need not insure (though he usually does for the sake of convenience), because he can estimate roughly what number will be lost; his losses will almost certainly be less than the insurance premiums required, and there is virtually no fear of disaster.

Insurance is hedging on a large scale, carried out by a company formed for the purpose. A large life-insurance company can predict the total number of deaths in a given period with remarkable accuracy; a large, soundly conducted company of this kind is one of the safest of ventures. The company pools all the individual chances of a large loss, and pays out the actual losses, which are fairly constant in total amount; as premiums it receives a sum which will cover the actual payments, together with profits, fixed by competition between the different companies.

Insurance tends actually to reduce risks, for the companies insist on the use of proper safeguards. Risk is also reduced by the spread of knowledge; State information and efficient newspapers may give invaluable knowledge of foreign conditions, and thus a fertile source of business risk is removed.

Business men who seek loans from bankers will pay a risk interest fixed in some such way; in practice, however, personal risk may be all-important. Trade risks are calculable, but individual estimations must be made to cover personal risks; an individual business man will borrow from the banker who estimates the risk at the lowest rate.

OTHER ELEMENTS IN GROSS INTEREST.—Another element in gross interest is inconvenience, strictly so-called. When a man lends money he loses command of it for a period, apart altogether from the fact that he might be making a good use of it himself. He may require a payment, however small, for the fact that his money is locked up, and that he gives up the choice of the use to which he may put it. When a man lends money, also, there is a chance that he is losing a possible future favourable employment for it. In certain cases, especially on a stock exchange, the payment for the locking up of capital for a short period may be very high.

Again, many loans entail considerable trouble to the lender, especially with regard to book-keeping and arrangement of continual new loans for short periods. The charges of pawnbrokers sometimes seem very large when reckoned on an annual basis, but an immense amount of trouble must be taken, and the pawnbroker rightly demands payment; if such charges were really exorbitant, new pawnbrokers would soon drive them down by their competition. The gainings may be a little above the normal, for most people avoid the occupation; there are, however, many men who would immediately be attracted by very high profits.

The remaining portion of gross interest is net interest, or interest in the true economic sense. Net interest is the payment which must be made to the owners of capital by an entrepreneur in return for its services as a factor in production. There is thus a large demand for "barren" money, at a price which in normal times is about 2 or 3 per cent.

12. Discounting

An employer requires compensation for the money he must lay down before his product can be sold. £100 a year hence is worth much less to-day. The present worth

can be deduced if the rate of interest is assumed: it will be that amount which in one year's time at the current rate of interest will increase to £100; this is obtained by a simple arithmetical calculation. A still simpler method is used in practice: an employer or financier calculates the interest on the money for the given time and subtracts it from the face value; an employer would take the present worth of £100 due two years hence at 5 per cent. as £90; in reality, it is a little more. This process of discounting is highly necessary, for an employer must pay interest on the money or other borrowed capital he holds; interest is a first charge on an employer's profits. Measured in terms of product, a workman thus obtains more than the face value of his wage, for he has obtained the discounted value of a larger amount. An employer may obtain an apparently high price for goods whose payment is due six months hence; the actual present value is much smaller. So a shopkeeper who sells for cash may charge much lower prices than a credit concern, for not only are his risks less, but also he is paid at once and so need not charge interest.

13. The Effects of Technical Progress on the Rate of Interest

This question has already been partly answered in the chapter on wages. Let us suppose that a new method or a series of inventions multiplies the processes done by machinery in the production of a commodity, it is evident that the marginal demand for the old quantity of capital must increase and the rate of interest will tend to rise. Supposing, however, that the new methods, or inventions, simplify the processes of production and cheapen and reduce the quantity of machinery required for a given output, then the marginal demand for the existing quantity of capital will tend to fall.

In the long run, however, as experience proves, these two tendencies would at least balance each other. Again, we have assumed the output to be unaltered by the changes,

but in either case, new methods and inventions are not likely to be adopted unless they promise greater productivity. And in the long run, greater productivity would lead to an increase in the accumulation of capital in a greater ratio than the increase in marginal demand on the first hypothesis; hence the ultimate effects of technical progress are much more likely to lower than to raise the rate of interest, although if new and very expensive machinery were suddenly introduced throughout the whole of several important industries the immediate effect might be to raise the rate of interest, other things being equal. This proviso is necessary, because the change may take place when other forces are making for a rapid increase in the accumulation of capital.

In the short and even moderately long period, however, there are good grounds for Wicksell's assertion that, while the capitalist saver is the friend of labour, the technical inventor is often its enemy. Technical inventions usually lead to longer term investments because they become more profitable, and, as Wicksell shows, this may have important consequences. Lengthening the term of investment causes less capital to be consumed in the course of a year, so that a greater quantity of current land and labour will be available for the production of consumption goods, with the result that the marginal productivity of labour may fall and that of capital rise. This is a more fundamental way of stating the effects than saying that by directing capital to more remote ends the relative scarcity of capital for more immediate purposes is increased. For one thing, it brings out the familiar fact that technical inventions may cause labour to become superfluous for a period more or less long. The great inventions of the early stages of the Industrial Revolution at first lowered wages and raised the interest on capital, but as capital gradually accumulated, interest fell and wages rose.

14. Application of the Theory of Interest to Old Investments

The marginal theory of interest refers only to new capital. When money is lent, especially for industrial purposes, it is usually absorbed as capital goods. The employer bases his demand price on present and probable future industrial conditions; for a time the reward to capital may agree with his expectations. If the capital is converted into fixed capital, *i.e.* looms, changes in trade conditions may make the looms more or less valuable. Now it is not expedient to regard interest as variable throughout a competitive area. Money is everywhere the same throughout a given country, and thus net interest will be absolutely constant if competition is perfect, for one sovereign or one note is as good as another. Thus it is not advisable to say, as the productivity of the looms changes, that the rate of interest on the original capital alters; it is much better to suppose net interest to be constant, and the value of the looms to change in conformity with their product. The process of estimating the value of fixed capital by its product is known as Capitalisation.

Suppose that the productivity of a loom was estimated at £500 per annum, that the loom was indestructible, and that the estimated productivity was constant. If interest were at 5 per cent., the capitalised value of the loom would be £10,000, for the employer would obtain the same income from the loom as from the money. The value can also be obtained by adding together the present worth of all the annual incomes, *i.e.* a sum of varying terms gradually diminishing to zero; a simple application of algebra (geometrical progression) will show that the sum will amount to £10,000. (Interest is taken at the net market rate.)

The latter method is used in the case of an article which wears out after a time; the net product attributable to the article after the first year is discounted, and the same process applied to every succeeding product. The sum of

the discounted values is taken as the value of the article. When this is done, the article is found automatically to yield the market rate of net interest.

By this means, old capital is artificially brought into line with new; all capital thus obtains the same rate of net interest under competition; this must not be regarded as a proof of the tendency of net interest to equality, for that would be to argue in a circle. It is said that net interest on new capital tends to equality because such capital takes the form of money. There is a real advantage in capitalisation, for it allows of an extension of the reasoning otherwise applicable only to money; capitalisation is worked out, however roughly, whenever fixed capital is sold, and thus the process is not merely a mathematical abstraction.

This capitalisation occurs in practice in the case of land. If a man buys a pair of boots the expected benefit may be viewed as a whole, and they will be worn out so quickly that the question of discount is of small importance; the benefits obtained from land stretch out indefinitely into the future. Thus the value of land alters as interest alters: when interest is high, discount is an important factor, and the value of land is lower than the normal. The reason for this is that when interest is high an investor can obtain a good return by investing in gilt-edged securities. This fact will lower his demand price for a piece of land which affords a given rent.

So far, we have assumed the rate of interest on old capital to be flexible, but investments are often made for long periods, or in perpetuity, at a fixed rate of interest. In such cases, a rise or fall in the rate of interest does not affect the earnings of these old investments, but it affects their capital value.

Suppose that £100 were invested in a fixed interest bearing security at 10 per cent., and suppose later that the market rate dropped to 5 per cent. The capital value of

the claim to the income from this investment would have doubled, because with the market rate at 5 per cent. £200 would have to be invested to produce an income of £10. In a similar manner, a rise in the rate of interest would lower the capital value of old investments made at a fixed rate of interest.

The relation between the capital and income value of any good varies with its durability; that is to say, with the rate of interest. In the case of a good that functions for exactly one year, it is evident that its capital value cannot exceed its income value. At the other extreme we have durable goods like houses or land which can be made to yield income in perpetuity. Their capital value is not infinite because the expectation of living is not infinite, but it is a multiple of the income value roughly equal to the average expectation of life; or more simply and concretely, it is the capitalised value of the expected income at the given rate of interest. The lower the rate of interest and the greater will be the capital value of any very durable good. This means that, the more durable the good, the greater will be the difference between its income value and capital value.

Changes in the rate of interest also affect the prices of commodities. Interest payments are an item in the entrepreneur's expenses which must be covered; hence, a fall in the rate of interest, other things remaining equal, tends to lower the prices of commodities in the first instance.

The above statement is not necessarily true except in the first instance. A fall in the rate of interest may induce the middle-men to increase their orders for stock, and in that case the increased demand for commodities would send up their price.

15. Tendency to a Uniform Rate of Interest

Gross interest, that is the amount actually charged to borrowers varies considerably, not only from place to place, but even in the same place. In London, for example,

the interest rates on Bank Deposits, the Bank of England Rate, the Market Rates of Discount, the Discount Rate for Treasury Bills, and the interest rates for Day to Day and Short Loans,¹ vary a good deal at any one time.

Some of these rates may, or may not, coincide with those of long-term Government securities, and all of them may be well below the rate of interest on real property mortgages.

Most of these differences can be explained away by the variable elements in gross interest, particularly risk and convenience. The element of time exercises an obvious influence on the rate of interest. Even if the repayment of the advances is equally certain in all cases, a loan of £1,000 for twenty years must command a higher price than a loan of the same amount repayable at short notice. In the first case the lender suffers the inconvenience of having his capital locked up for a long period, during which time, if it were liquid, he might be able to use it to greater advantage. Again, the security itself might depreciate considerably during the interval between the issue of the loan and its repayment. The difference between the rates charged for Three Months' Bills and Day to Day Loans is explicable on the same grounds.

In practice, it is an extremely difficult matter to disentangle the elements which make up gross interest from purely net interest. If we could imagine all these variable elements smoothed away, perfect competition, and one market, net interest would tend to equality.

As was shown above, however, there is not one, but a number of distinct loan markets; in each of these gross and probably net interest are equal. The differences between the rates charged in these various markets is not wholly explained by differences in the elements superimposed above net interest. Many of these markets cater for distinct classes of customers; capital is therefore not

¹ See Weston: *Banking and Currency*, p. 115.

perfectly mobile between them; hence, if pure net interest could be perfectly isolated, it is highly probable that it would vary, more or less, from market to market.

16. The Abstinence Theory of Interest

Modern theories of interest, like many other economic theories, developed in the peculiar conditions of the Industrial Revolution during the early nineteenth century. During the greater part of the century, from Senior onwards, interest was believed (at any rate by orthodox economists) to be the reward for abstinence.

In a certain sense this is a truism, because interest could not arise but for the phenomena of lending, and unless some persons accumulated capital by refraining from consuming the whole of current income, lending could not take place. In so far as abstinence was an unfortunate term for "waiting," it contained a very important aspect of truth.¹

But this was not quite what was in the minds of Senior and his circle. Abstinence to them was fundamentally a real cost, and interest was held to be the measure of, or at least proportional to, the painful efforts required to call the necessary amount of capital into being. It was a pure cost of production or labour theory, which we have already rejected in other connections.

The weakness of this theory is seen with special force when applied to interest, because the bulk of the capital accumulated has its origin in the surplus wealth of the comfortable and rich classes, and its accumulation has involved no real costs for these classes. The only sense in which a cost can be imputed to this capital is the sense of a comparative or alternative cost.

Even more recent theory, while admitting the force of this argument, has insisted that the marginal part of the

¹ Cannan: *Economist's Protest* points out that abstinence is a purely negative act.

supply is provided by the efforts of poor men, who will only consent to save at a rate of interest that will compensate them for the efforts made, and that the cost of the marginal part of the supply fixes the rate of interest for the whole, the richer classes taking an "unearned increment" in the sense of receiving a higher rate of interest than their reserve price for lending. But, as has been repeatedly emphasised, it is the amount of the supply relative to the demand that determines prices; the origin of various parts of the supply has no price significance at all; and it is a misleading conception to view the marginal increment as a specific increment in the supply.

17. The Socialist Theory of Interest

The German socialists, *e.g.* Karl Marx and Rodbertus, believed that interest was a form of robbery, and that capitalists had obtained a strategic position; labour was kept down to subsistence level, and the bulk of the surplus was obtained by capitalists. They professed to find inspiration from Ricardo, but were misled by his conciseness: a careful study of Ricardo shows that he realised fully that labour needed the help of capital, and that capital was more than a mere product of labour. The socialists assumed that as capital was in the last analysis derived from labour, the labourers were entitled to the whole produce of labour; they supposed that labour was being exploited.

Marx's conception of labour itself was one-sided; brain work is as essential to production as muscle; in the future it may be increasingly important, as muscular work is being continuously displaced by machines, *i.e.* capital. Even part of the employer's work does not differ in kind from that of the workman, and under present conditions it is essential. The early socialists tended to stress the importance of manual labour compared with brain work,

and to overlook the function of interest in placing a necessary limitation on demand in view of the relative scarcity of capital.

18. The Agio Theory

Böhm-Bawerk propounded a theory of interest which has been favourably received not only in Austria but also in America. He supposed that interest was due to the fact that men prefer present goods to future goods, or that there was an "agio" on present goods. Because of the existence of this preference, men are loath to lend money; when it is paid back, the exact value may be returned, but £100 a year hence is not as valuable to the normal man as £100 at the present moment. Thus as present goods are more desirable than future ones, a man must pay back more than he borrowed, or the lender will feel himself defrauded. £100 a year hence may seem to be worth only as much as £95 now; £100 two years hence may seem worth only £90 to-day. Thus if £90 is lent to-day, £100 will be expected two years hence; if £95 is lent, £100 will be expected one year hence.

The observations of this school were quite correct, but they have been attacked on the ground that they stressed the existence of a premium too much, and that, while Böhm-Bawerk realised the effects of demand for capital, his theory attached too much importance to the supply side of the problem.

Such objections are, of course, quite unjust. Fundamentally the theory amounts to the same thing as the exposition of the nature of interest given in Section 2 of this chapter. It was shown there why, from the point of view of the borrower, present goods are more valuable than future goods, and why, from the point of view of the lender, the present marginal value of money to the lender is lower than the present marginal value of money to the borrower. But this is only restating the argument of

Böhm-Bawerk in a slightly different way and perhaps from a slightly different approach.

Interest as a purely exchange phenomenon as expounded above was by no means the whole of Böhm-Bawerk's theory, though it is the part to which attention and criticism has been mainly directed. As Wicksteed shows, interest can, and indeed must, arise, irrespective of any question of industrial relations, but in the economic world the industrial aspect is of primary importance.

It is, however, very inaccurate to suppose that this aspect of the question was neglected by Böhm-Bawerk. No economist has developed more brilliantly and fully the effect of capitalistic methods on the course of production. It was a cardinal feature of his thought that what is called the "roundabout" structure of production, that is to say, production in specialised stages involving the use of capital and the time element, is more productive than direct production carried on solely with current resources, and that out of this higher productivity interest arises. Fundamentally, then, Böhm-Bawerk's theory of interest was a marginal productivity theory, though this fact has usually been neglected because at different times he placed different emphasis on the various strands of his thought.

The principle that present goods are of a higher value than future goods in exchange operations appears in the structure of production in the form that past goods, *i.e.* capital, are more productive than present goods. This is true as a general rule, but it does not mean that the productive process can be always profitably lengthened indefinitely. As Wicksell shows, there is a limit to which production can be carried profitably with a given supply of capital and labour. If the structure of production were lengthened beyond this point, profits would begin to decline, even though the absolute yield continued to increase. This follows from the obvious connexion between the amount of specialisation possible and the

supplies of capital and labour available. A given quantity of these resources can only support a time structure of production of a definite length to maximum advantage. A slightly shorter length would increase profits just as a slightly longer length would reduce them. It is only the problem of diminishing and increasing returns, treated in an earlier chapter, with the time element emphasised.

Böhm-Bawerk was, of course, aware of this, and refers to it, but the form in which he stated his problem provided his critics with a loophole for attack. But no pathbreaker clears the ground at every point or is above criticism on some details. He was on sound ground in stressing the connexion between time and interest, for the productivity of capital or, more accurately, of capitalistic methods of production, cannot be separated from the element of time; indeed, Wicksell, whose theory of interest is a modification and completion of that of Böhm-Bawerk, shows clearly that the problem can be so stated that interest appears as the marginal productivity of waiting. In substance, then, there is no fundamental difference between the views of Wicksteed, Böhm-Bawerk, and Wicksell on the question of interest. Fundamentally all three writers accept the marginal productivity theory of interest, though Wicksell gives to the productivity aspect of the problem the clearest exposition.

- REFERENCES. Benham: *Economics*.
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Wicksell: *Lectures on Political Economy*.

CHAPTER XV

PROFITS

1. Introductory

Land, labour, and capital would be of little use as productive agents were they not brought together by a directive agent. An individual who brings together these three factors in a business, demands and obtains a reward which is known by the term profits. The net profits, or profits simply, of an entrepreneur may be taken to mean the whole net receipts after allowance has been made for depreciation or appreciation; profits represent the whole amount remaining when the necessary factors have been paid for. It may be that the employer has used his own capital, partially or wholly: profits will thus include a gain which should rightly be called interest; the employer might have invested his capital and obtained interest; profits do not include that element which is estimated as the interest on the money used by the employer; and neither do they include such remuneration as he is entitled to for his technical management of the firm.

2. Complexity of Profits

The early economists tried to find a simple and comprehensive theory of profits; the socialist description of profits as exploitation was an example. Some professed that profits tended to equality. Profits, however, are of so complex a nature that no satisfactory simple theory has been propounded, and general statements in regard to profits are not often of great value. Business units vary from the casual and fleeting "one-man business" to stable amalgamations which control an appreciable proportion of

the labour and capital of the country. The small trader earns profits; the responsible manager of a large company receives a salary, though his work may include much real organising work. It is difficult to frame a simple theory of profits which would include the small independent trader, the large employer, the small holder, and the shareholders of a joint-stock company, whilst excluding responsible managers. In a general survey of profits the relationship with wages has been stressed. None the less, profits and wages differ in many respects, and prominently so in short periods; the social importance of distribution also compels a closer analysis of profits; before attempting this, it will be useful to glance at the peculiarities of individual businesses.

The two extremes of business units differ in more than size. A small, one-man business is often carried out by an enterprising man with little capital, whose one aim is to take quick advantage of market changes. Such a man is essentially mobile: he has little or no fixed capital, and can change his methods quickly and easily. His work is risky, for he is at the mercy of quick changes that he cannot always utilise. Small businesses which fulfil these conditions tend to provide large profits, for they are managed as a rule by men of exceptionally quick intelligence; such a man will earn more than his fellows in the same social stratum, and is likely to obtain a bigger rate of profits than is obtainable in big business.

Production which is carried on by routine methods involving little risk, but requiring much expensive fixed capital, offers no scope to such a man; such undertakings must be financed by men or combinations of men who own or control a large amount of money. Large joint-stock companies are especially suitable for such work. Banking and rail transport are examples of trades which are especially suitable for company management. Most other trades are intermediate between these extremes; roughly speaking, the greater the amount of fixed capital, the less

risky and the more conventional are the business methods, and the lower on the whole is the rate of profit. Like other generalisations concerning profits, this rule is subject to important exceptions.

3. Analysis of Gross Profits

Net or pure profits is the residual surplus left when all the necessary expenses and hires in connection with production have been met; and in order to gain a clear notion of the concept it is necessary to disentangle the elements often confused with it, and rendered by the term gross profits. The most important of these are interest, wages of superintendence, and risk.¹

INTEREST.—It is easy to confound interest with pure profit, particularly where the entrepreneur invests a part of his own capital in his business. That part of profit which represents the interest the employer would have received had he invested his money, is in no way different from the interest he has to pay out for the money he borrows; thus, this interest should be subtracted from profits, or, for simplicity, we might consider the case of an entrepreneur who works solely with borrowed capital.

EARNINGS OF MANAGEMENT.—All employers must do a little actual work, mainly superintendence; in a large business this will be confined to the supervision of the work as a whole or to that of the managers. In the army a high officer rarely interferes with the internal administration of a unit; he inspects the unit as a whole and thus indirectly supervises the work of the junior officers. Such supervision is labour rather than organisation.

Wages of superintendence are best considered as the wages the employer could actually earn if he were a paid manager, and did the same class of managerial work as he

¹ For a more detailed list see Chapman: *Outlines of Political Economy*, p. 326.

is actually doing. Such an estimate is not easy to make, but for present purposes it is sufficient to assume that it may be made. Gross earnings of management cannot permanently fall below this level (after allowance has been made for incidental advantages of an employer's position, and the difficulty of realising stocks and fixed capital has been considered), for otherwise the employer would become a paid manager; but they may fall below it for considerable periods: an employer may consider it worth while to continue production so as to preserve continuity, and to be ready for the better times which will probably follow.

RISK.—The next element in gross profits is that of allowance for risk; risk is often covered by the building up of a reserve fund. A wage-earner is partially insured against risks of business; his wages are apparently low not only because he is paid at once, before the product is sold, but also because he receives a wage irrespective of the state of the market; he may receive the same rate of wage while the employer is working at a loss (considering supplementary costs). If an employer borrows money, the lenders safeguard themselves by an increased rate, and profits must cover not only this increased amount but also a similar insurance which the employer himself demands for undertaking the serious risks of business. As business men are becoming better educated, and as information of world conditions is spreading, this necessary payment is gradually diminishing in amount.

These are persistent elements in earnings of management; they are equally present in long-period profits, of which they form a core which is relatively stable. These two elements are probably as constant in amount as are wages and interest. The violent fluctuations of profits are due to the presence in earnings of a third element, a surplus or residue, which is sometimes called pure profit. Pure profit is perhaps the nearest approach which can

be made to the conception of the payment to organisation as a factor in production.

PURE PROFIT.—A pure organiser, meaning by this a man who does no productive labour, is essentially creative in the sense that organisation makes possible an increase of production otherwise impossible. His work depends on two groups of conditions: first, it depends on the number and quality of the available factors of production, their price, and the increase of their productive power when combined; second, it depends on the state of demand for the commodity to be produced. The supply of factors is, relatively speaking, fixed, but their prices may vary greatly; demand for commodities is perhaps still more variable. Thus the essence of the organiser's task is to obtain the right quantity of factors in the right proportion; to combine them in the right way, so that the particular amount of commodities shall be made which shall obtain the largest profits.

The difficulty is at times stupendous. First, the employer does not produce for a present known demand, but for a future demand, whose extent he must gauge from present conditions. Further, much production is carried out in the hope of meeting a potential demand in a new market, at home or abroad; if an employer makes a serious mistake in estimating such a demand, he is ruined. This is a phenomenon almost peculiar to modern times: medieval craftsmen produced for a fairly steady market, and enterprise was a function of merchants rather than of producers. The law of increasing return makes possible an enormous production at low cost; the employer's real difficulty is that of marketing.

On the other side the difficulties are perhaps less. Analytically, the problem of combining different factors, varying in efficiency and in kind, into productive groups in which the factors gain new values through combination

seems hopeless. In practice, the work is done with remarkable success; long experience has taught employers the general principles on which they must work. Similar businesses tend to be of similar structure; a new employer is usually safe in adopting a structure which has been found to be successful in other cases; he may experiment with a combination which has worked well elsewhere, and gradually adapt it to his needs. As a rule, the problem is not that of bringing into being a ready-made business, but rather that of continuous adaptation. A great part of the permanent structure is independent of ordinary changes in demand for commodities; the proportion between foremen and workmen is either constant or easily adaptable to circumstances. Further, when a business structure is working well, a slight maladjustment of resources is not of serious consequence; there is doubtless much waste of resources in every well-managed establishment, but a redistribution of factors would bring only a slight gain; in a badly-managed business, small maladjustments are much more important.

Thus the structure of a firm tends to become standardised; if in such a firm there are serious causes for concern, the effects will be soon recognised; sooner or later the obstacles to efficient working will be smoothed out. It does not follow that the standards on which most firms are built up represent the ideal forms of organisation; it does happen that such a standard structure will work, and that it develops into an increasingly efficient system. The average employer can delegate the small problems of organisation to managers and foremen, and he can thus leave his best energies for the consideration of the more uncertain problems of market demand for his goods.

The good organiser thus directs productive factors into such a combination that internal economies are most pronounced; if he can find a new method of combination more productive than the old, he will be able for a time

to secure the whole of the extra gains thus obtained; if at the same time he is alert enough to take advantage of changes in demand and, equally important, to restrict production when demand is about to fall off, and if he is fortunately situated with respect to demand, then he will obtain an abnormally high profit; after all deductions have been made, there will be a surplus over normal wages of management.

4. Uncertainty and Profit

To understand the essential nature of pure profit it is necessary, however, to dig a little more deeply below the surface. It is often stated that pure profit is the reward for risk taking or bearing, but the term risk is capable of two distinct interpretations.

In a large and important sense risk is a calculable chance which can be measured by the laws of mathematical probability, and if only the number of instances considered is sufficiently large, chance or risk tends to approach certainty. It is on this fact alone that insurance against risk is calculable and practicable, and the general tendency of modern business is to make provision against the possible ill effects of risk by the various devices summed up in the word insurance.

Insurance against foreseen and anticipated risks is a necessary element in entrepreneur's expenses; it is a responsibility now assumed by a special class, which has no necessary connexion with any specific productive business, and may quite logically be regarded as a distinct factor in production.

But there are risks of a type that cannot be insured against because the future cannot be foreseen; hence they cannot be standardised, *a priori*, or by induction, and are thus not susceptible to the principles of insurance.

Risks of this second class are true uncertainties, and, as Professor Knight has clearly shown, it is uncertainty

bearing rather than risk taking, which is the special function of the entrepreneur, and leads to pure profit.

The essential difference between risk and uncertainty can be easily distinguished in any business operation. A builder decides to build a house on a vacant plot of land, for example. Now there are certain risks against which he must make provision—accidents, perhaps the difficulty that may arise with respect to some type of labour, a sudden rise in the price of raw materials, and so forth. The first can be, and in fact is, insured against regularly, and the others can be provided against with a good degree of accuracy, because they tend to occur with a fair degree of constancy.

When, however, the house is completed and the question of selling arises, our builder leaves the realm of risk for that of uncertainty. Of course he would not build if he did not believe in his ability to sell the house at a profit, but it is purely a matter of opinion, and it may be that his opinion is not shared by other builders. At the commencement of the work he cannot foresee whether he will sell at a profit, or a loss, or even if he will sell at all, because every instance is, to a large extent, peculiar, and the chances of each of the three above-mentioned events taking place cannot be measured, because they are governed by a complexity of causes which are probably never identical in successive cases, and certainly are not known by the builder in advance.

The proof of this contention is given by the very name "speculative" builder, and though the building trade probably lies at one extreme, the general principle runs throughout the whole range of industrial enterprise.¹

The relationship between profits and uncertainty should now be evident. The greater the degree of uncertainty in

¹ Since 1914 the building trade has been in an abnormal condition, but in pre-war days there was probably no industry in which money was more quickly made and lost.

a business, the greater will be the probability of higher profits. This is only another way of saying that profits are the fruits of speculation and, in no small measure, of good fortune. It will be noticed that we have reached ground far removed from profits as the reward for efficiency, but we shall return to this matter later.

5. Profits and Monopoly

The uncertainty aspect of profit discussed in the last section relates mainly to free enterprise, though not to perfect competition. Monopoly profits which are due to the strategic position of a monopolist able to exact a surplus profit by consciously regulating the supply to his own advantage have been dealt with elsewhere, and need not detain us here.

In the actual industrial world, however, competition works very imperfectly. It works imperfectly between the members of the entrepreneur class, and between the salaried, and the wage-earning classes. The element of uncertainty entering into the estimates of the relative strategic positions of the employees and employers doubtless allows the latter to wrest from the former what Mr. Hobson calls "forced gains," a surplus which is really due to imperfect competition, and may be classed as a monopoly surplus.

But competition between the members of the entrepreneur class is far from perfect, and this applies with special force to the industries in which the element of uncertainty is greatest. A dynamic world demands a class of people able and willing to assume the responsibility for dealing with uncertainty, and this class of entrepreneur is usually scarce relative to the demand; hence it can usually appropriate part of the remuneration that is to say, capital, labour, or land, which under conditions of perfect competition, would have gone to one or more of the other elements of production.

There is a good deal in common in the views on profit of Mr. Hobson¹ and Professor Knight, although Knight's theory is more complex and profound. Hobson's entrepreneur of creative ability corresponds roughly with Knight's successful bearer of uncertainty; but whereas Hobson emphasises the scarcity element in the entrepreneur class, which in turn leads to imperfect competition, and the power to exact "forced gains," Professor Knight regards this surplus as the result of failure on the part of other entrepreneurs, and the owners of other resources, to estimate the situation correctly; and in consequence they allow the successful entrepreneur to acquire control of the necessary means of production at a cheaper rate than that which they could compel him to pay.²

6. Normal Profits

The reader may now be inclined to ask what has become of those normal profits which are a commonplace of every textbook, and which we assumed in earlier chapters?

The answer is, of course, that the surpluses due to uncertainty and imperfect competition are bound inseparably with dynamic, *i.e.* changing conditions. Normal profits belong to the equilibrium state, and to the state in which changes are taking place which can be anticipated and calculated.³ Change is never absent from the concrete world, but in a developed country like England there are large fields of economic activity in which conditions are relatively static, and in which business is fairly routine. Here normal profits are a necessary concept.

In a state of perfect equilibrium, resources would be fixed in quantity, and so distributed that no one would have an economic motive for transferring productive resources from one firm to another, or from one industry to another.

¹ *Industrial System*, pp. 125-7.

² *Risk, Uncertainty, and Profit*, Ch. IX.

³ See Knight: *Risk, Uncertainty, and Profit*, Ch. V.

It is evident, then, that in the process of adjustment towards equilibrium, pure profit would tend to disappear, leaving to the entrepreneur only the wages of superintendence, when all his necessary expenses had been paid. In other words, normal profits would be practically synonymous with the earnings of management.

In a progressive state, so long as the effects of changes are calculable, a similar result would tend to ensue in the long run, provided that competition is not consciously restricted. The fact that changes do not occur uniformly, and concurrently in every phase, would give the employers in certain industries an advantage which would enable them to wrest a rate of profit higher than that possible in other industries.

Over a short period, in any state outside perfect equilibrium, surplus profits can be made even with uncertainty excluded. The condition, however, would be but temporary; entrepreneur ability, and other means of production, would gradually flow into those industries in which profits were above the normal; in such industries the rate of profit would gradually fall, while in those industries depleted of resources, profits would gradually rise, and the final result would be that profits in all industries would oscillate about a point of normality.

This does not necessarily mean that normal profits would simply be the wages of a hired manager. Even in a dynamic society with uncertainty excluded, the existence of change would involve a greater degree of final responsibility, and this would have to be paid for to evoke the necessary supply; but competition would fix this margin within narrow limits. Except when a monopoly supplies a commodity for which demand is rigid and it is difficult to find a substitute, abnormal profits can be permanent only when the uncertainty of the future cannot be calculated.

Uncertainty, too, is not a constant element. It has its degrees of intensity. The more we depart from the primary

necessities of life, the greater is the degree of uncertainty which surrounds production, though the building trade is an exception. Enterprises newly initiated are subject to a greater degree of uncertainty than businesses long established, and this no doubt accounts for the fact that new industries tend to yield a higher rate of profit than those which have been operating for a long period.

7. Tendency of Profits to Equality

It should be clear from what has been said above that this question can be answered only with qualifications. In a state of equilibrium, profits in the sense of wages of superintendence would be equalised, and pure profits would reach equality at zero.

In a state of society in which change was present but uncertainty absent, profits would tend to equality round the point of normality; differences would occur because ability is never completely equalised, but in any one industry the forces of competition would definitely narrow the margin, and what applies to one industry applies between industries if the necessary allowance be made for varying degrees of responsibility. The greater the degree of routine in industries, the greater the tendency of profits to equality, in the absence of special restrictions on competition, and in the long period. In the short period, as has already been shown, inequalities inevitably creep in.

In the case of surplus profit explicable on the theory of Professor Knight, there is no tendency to equality even in the long run, at least between the different industries; and on this point, theory seems consistent with fact. No doubt to some extent as experience develops, the abilities of entrepreneurs in a specific industry to deal with uncertain situations, and the degrees of uncertainty between different industries tend to approximate to the normal curve of error, that is, to cluster round the mean and to tail off at the extremes; but even so, wherever uncertainty prevails,

wide variations in profit are probable, and possible over a long period.

A differential element is always possible with respect to profit, as in the case of land, but it is a secondary, not an ultimate, phenomenon. Marshall describes it somewhere as the reward for efficiency, due to the lower cost of the better, over the marginal, firm,¹ the marginal firm being regarded as the least efficient, or the one working under the least favourable conditions. Profits of this kind are temporary only: they are the short-period profits that have their source in the changes that cause deviations from equilibrium, which can be measured with a fair degree of accuracy. The differential theory, however, is not an ultimate explanation of surplus profits due to uncertainty.

8. Supply of Entrepreneurs

The status of employer is attractive in itself; the attainment of independence is equally pleasurable, for just as a peasant will work hard for low wages rather than be dependent, so will a small employer work hard for small remuneration. Again, the possibility of very large profits is a great stimulus to some minds. On the other hand, there are natural barriers against the dependent classes; risk is an essential factor, and failure means ruin; the bankruptcy laws to some extent encourage enterprising men, but bankruptcy is in itself a great evil to the normal man. Most men are to some extent afraid of responsibility, and shrink from the risks of employing. In most cases, knowledge of trade conditions is essential. Thus the employing classes are mainly recruited from a minority of men who are already in the requisite atmosphere. As a rule a man can become the head of an important business only in one of three ways. First, he may have hereditary

¹ But as has repeatedly been shown, this notion of the margin is misleading. Such a producer is not necessarily the true marginal producer at all.

advantages and be specially trained, almost from birth, for this particular purpose; he may live in the atmosphere of business (though on the other hand it often happens that a boy grows up in antagonism to his father's business); at any rate the son or relative of a successful employer obtains an initial start which in many cases is a decisive factor.

Next, an employer may come more and more to rely on the help of a responsible manager or other employee; in many cases such a man is taken into partnership, and may finally obtain full control, while the original owner may become a sleeping partner. If there is no room for a partner, if there are efficient relatives who can conduct the business, or if the business is allowed to decay under inefficient ownership, the manager may decide to start an independent venture, for his experience has taught him those secrets which allow an employer to obtain a position of semi-monopoly; equally important, it has provided the atmosphere in which an employer must work.

Thirdly, there are exceptional men who reach the employing classes, sometimes from the lowest strata of society. Such men had relatively better opportunities of quick advancement in the early days of machinery, but exceptional cases still occur. To-day, however, the scales are so weighted in favour of the man already in a strategic position that even an industrial genius must take years before he can climb into the highest positions. The barrier is not so much that between employer and employed; even in the lowest strata it is possible for a man to be an employer on a small scale; it is rather that between the lowest and the highest grades of labour. There is a steady drift of labour from the workhouse through the grades of skilled labour, foreman, manager to employer. The stream is very thin at the bottom and at the top, for it consists of exceptional men, but it exists. It is not so obvious as in the late eighteenth and the early nineteenth,

centuries, for an exceptional man must move more slowly towards his goal; in the vast majority of cases the process must be continued through more than one generation. Mobility from class to class is slow compared with mobility from trade to trade.

Thus there has always been a scarcity of efficient employers; the rewards to organisation have been correspondingly high. As in the case of skilled workmen, preparation for specialised work is apt to be a slow process, and thus the supply of employers cannot suddenly be increased; even taking a long view, however, the number of men who are able enough and fortunate enough to become employers is very limited, so that under present conditions the supply of organising ability is permanently restricted; profits are, on the whole, permanently high. There are many men on the margin of doubt as to whether or not to become employers, and thus normal profits may oscillate between wide limits; the number of potential employers is not so great as to bring down profits to the level of wages.

Now consider the case of a potential employer; if his knowledge of market conditions is accurate and he is not misled by over-confidence he will consider not only present normal profits, but exceptional profits; if enterprising and sanguine, he will be attracted by the prospect of large gains which are being made; if cautious, he will rather contemplate the numerous failures; if he is a safe man he will concentrate attention on the profits of normal firms. On the whole the attractive force of a trade on such men will be measured by the decisions of the men of normal ability and character; the estimates of the sanguine and the cautious tend to balance each other. Thus the action of a normal man who concentrates attention on a normal business, roughly balancing the chance of great gain against the fear of ruin, may be taken as typical of the whole. If a normal employer shows fear, profits are

probably declining; if the normal manager becomes an employer, profits are probably high. In either case, however, the most marked effects will be seen at the margin; when profits fall, the least efficient employers will actually fail; when they rise, the most enterprising managers will first become employers.

In the long run normal profits will tend to realise the expectations of the normal employer, though quite other tendencies are at work during short periods. If long-period profits are higher or lower than the normal, the supply of employers will expand or contract, and bring back profits to their former level or near it. When profits do not reach expectations, after allowance has been made for exceptionally high and low profits, the number of employers will diminish and profits will rise; if market commodity prices do not grant the normal profits which are necessary to call forth a sufficient supply of employers, they will be obtained by limiting the supply of employers. Similarly, if the remuneration of works chemists or doctors or other men whose work requires expensive training did not cover the expenses of training, the supply of such labour would shrink until it did, as a result of the rise in marginal net product.

The concept of the normal employer, like that of normal profits, must be accepted with qualifications. It is largely an equilibrium conception, or at least it assumes a state of minimum uncertainty. Where true uncertainty exists, there can be no normal employer.

9. Social Usefulness of Entrepreneurs

Entrepreneurs perform a most useful function in the social economy. First, they are responsible for the efficient grouping of factors of production and, on the whole, the work is well done. Second, they bear the main responsibilities for the uncertainties of industry. Thus

modern industry has so far specialised types of productive ability that those who can do ordinary work well, and those who have special abilities as managers are relieved of a large measure of worry and responsibility. Uncertainty bearing is a profession in itself: the entrepreneur stands between the workman and the effects of rapidly fluctuating prices; if the workman were paid out of product, his wages would vary between wide limits; the employer, however, takes the excess gains in good times and suffers loss in bad times; he obtains a greater profit as a reward for this species of insurance of workmen's wages, but this is a payment for a real service rendered. Uncertainty bearing, on the whole, is a service to the workmen; organisation is a social service.

This is not a popular view with many people to-day who do not accept the implications of the present economic order of society; but even in a socialist state, so long as the principle of relative scarcity rules, rent and interest in some form or other would probably prove necessary as selective principles (as has already been noted). In a progressive socialist state uncertainty could not be excluded, and it is very much open to question whether the burden of uncertainty bearing could be shouldered by public officials as efficiently as by private individuals, and at less cost to society. It has always been an axiom of the textbooks that routine industries only were suited to State management.

10. The Function of Profits in a Progressive State

It follows from what has been said above that the function of profits is to induce entrepreneurs to adapt old industries to the methods made possible by technical progress, and to pioneer new fields of enterprise. The expectation of profit is the main-spring of industrial and economic progress. The alternative would be the rationing

and distribution of productive resources by some department of the State which would decide which commodities, and how much of each, should be produced.

11. Profits per Annum, and Profits on the Turnover

An important distinction must be made between profits per annum and profits on the turnover. Many shopkeepers believe in the principle of "small profits and quick returns"; the profits on the turnover are small, but transactions are so numerous that annual profits may be large; a motor car or piano dealer, on the contrary, may make very large percentage profits on the turnover, but as transactions are few, the annual profit is not abnormal. Speaking generally, the rate of profit necessary to keep a firm going varies inversely to the number of times the firm's capital is turned over annually, or in a given period. It should also be noted that a rise in the absolute amount of net profit is possible when the rate of profit on turnover or expenditure is falling, if the number of sales is increasing, and the firm has not yet reached the optimum scale of business. The firm will have reached the optimum scale of business when the average net profit per unit of expenditure multiplied by the number of units of expenditure is at a maximum.

12. Profits and the Cost of Production

On the problem of whether profits are a factor in determining prices, opinions still differ. That the wages of management enter into the expenses of production can admit of no doubt, and this is equally true of that normal profit which is not the fruit of uncertainty. If the profit necessary to evoke an adequate supply of entrepreneurs into a specific industry were not forthcoming, the supply of the commodity would shrink, and the price of it, other things being equal, would rise until equilibrium was once again

restored. Normal profits, then, are a necessary payment, and a necessary payment must be reflected in price.

But does this argument apply to pure or surplus profit? Now it is sometimes argued that it does not: for it is held that in highly speculative enterprises, the peculiar field of pure profit, the industry as a whole is run at a loss; in other words, that while a few entrepreneurs reap high rewards, the great majority barely cover expenses or, indeed, work at a loss. The conclusion is, of course, that as the industry as a whole, or even in major part, is not making pure profit, the exceptional profits of the few can exert no effect on prices.

This argument, however, is only a variant of the Ricardian conception of the margin which we have discussed so many times. The least efficient entrepreneur (in cases of this kind, he would be the man with the least ability to deal successfully with uncertainties) is making no pure profit. But his costs fix the supply price, and as these costs are higher than those of the most skilful producers, their differential profit has no effect on price.

But these men are not the true marginal producers. No doubt the case in question differs from that of the routine business discussed in an earlier chapter. There it was pointed out that the more efficient producer would be as likely (if not more likely) to leave the industry for alternative employment as the least efficient man.

In highly speculative enterprises, which after all bear some resemblance to a lottery, a stream of least capable men would probably, though not necessarily, flow in and out of the industry.

But, and this is the all important point, these men would have little effect on supply in a highly speculative industry. In the extreme case, say of gold mining, this is clearly apparent. Where uncertainty predominates, it is the most able, in some cases the creative genius, who is most necessary to the supply, and who is the marginal producer

in the true sense. To retain him in the supply, therefore, his surplus profit is necessary, and must be paid for; otherwise he would transfer his peculiar abilities to some other branch of production.

Profits have often been compared with rent in the Ricardian sense. If we take as starting-point no-rent land and the no-profit business, both rent and profits appear as a differential surplus, the main difference being that rent tends to be much more permanent than profits. But while this argument is misleading and not universal, it is easy to establish a close parallel. Rent arises from the relative scarcity of the products of land, and, excluding the case of monopoly, pure profits arise from the relative scarcity of the true entrepreneur class. In a fully settled country, marginal land in any one use usually pays a rent in the sense of hire, because it is more or less urgently demanded for some alternative use. In a similar manner the marginal entrepreneur in speculative enterprises must receive a profit at least equal to that which his abilities would command in some other field. He may, of course, receive more, but up to a certain point it seems more correct to treat his profits as a necessary payment than as a surplus.

Wieser includes the entrepreneur among the specific means of production, like land. On his argument, profits, like rent, appear as surplus over cost payments. But we have already shown in connection with rent that, in a fully settled country like England, land loses a good deal of its character of a specific means of production, as the bulk of it is competed for by alternative uses.

Now the same argument holds with respect to the entrepreneur. The true marginal entrepreneur in an industrialised country is a cost means rather than a specific means of production because, like land, he has alternative employments. Wieser's classification is a very interesting one, but in a country like England a rigid line cannot be drawn between specific and cost means of production.

It seems more in accordance with reality to regard some part of every factor as specific means; some part as cost means; and a large part of each factor as partaking of both characteristics in varying proportions. In this way we can reconcile many apparently conflicting statements. But whichever point of view we adopt we are brought back to Wicksteed's conclusion that everything that can be said of land, if true, applies equally to the other factors.

13. General View of Distribution

Distribution may now be viewed as a whole. In discussing the reward to each factor in turn, the existence of normal remuneration to the other factors has been assumed. In fact, all the factors are continually changing in amount and efficiency; the owner of each factor must compete with the owner of every other. If all the factors were inanimate, and in the grip of a single control, the tendencies which are now obstructed by relative scarcity would be allowed full play,¹ if the factors were interchangeable to such an extent that marginal net product could be equalised. In this case, all factors would be used up to that point at which marginal net product was equal at all points. The same thing would happen if the present possessors of labour, including employers, were under such absolute control. Intelligent and enterprising men would be taken from the overstocked occupations and made employers. Then, taking as equivalent units that amount of each factor obtained with equal difficulty by the controller, every unit, of whatever kind, would obtain the same marginal product. In these circumstances every unit would be entitled to the same remuneration. If employers and workmen were quite interchangeable, employer and workman could demand the same wage. There is no inherent superior importance in the employer's work; in a perfectly regulated state, there would be no scarcity of

¹ So long as the scarcities are not due to natural causes.

employers.¹ So, a diamond is not inherently more valuable than a grain of corn; its potential utility is far less.

Under given conditions, land, capital, labour, and organisation may be employed in a theoretically most efficient manner, when the product is defined. This state is never attained, for some factors are too abundant, relatively to this ideal combination, and others are too few. To-day, employers are too few in number, but labourers are too many. If all were of equal ability, the ideal combination, as between different kinds of labour, would be obtained when all wages were equal. If one factor becomes relatively scarce, its owner obtains an advantage; if labour becomes more efficient and capital increases, then landowners will benefit, because the balance has been disturbed: land is relatively rarer. If capital increases faster than other agents its value will fall; interest will drop. If new land is opened out and capital increases, and workmen become employers, the wages of other workmen rise. The earnings of any one factor depend, firstly, on the size of the dividend to be distributed, secondly, on the relative abundance or scarcity of the given factor.

The share of any factor of production can be considered from two points of view. It is clear that a share can increase absolutely or relatively, or in both directions. What actually takes place depends on the elasticity of demand for a factor, which in turn depends on its elasticity of substitution. If we consider for the sake of simplicity only two factors of production, labour and capital, and assume that the proportions of both in any use are fixed (elasticity of substitution = 0), it is clear that a fall in wages will diminish both the absolute and relative share of labour, because the same quantity of labour would be employed as before.

¹ In a perfectly regulated state, uncertainty would probably disappear.

If, on the other hand, the conditions of production are such that a slight fall in wages would lead to a complete substitution of labour for capital (elasticity of substitution of labour for capital = infinity), it is obvious that the share of labour would increase both absolutely and relatively.

Actual cases fall between these extremes. Substitution is usually possible, but it is never complete. It varies within limits, but these limits are elastic according to circumstances. With the march of progress the absolute share of all factors tends to increase under competitive enterprise, but it does not follow that the shares as relative proportions will remain constant. Ricardo thought that the increasing pressure of population on a scarce area of land would lead to a gradual increase of the relative share falling to the landlords, but free trade in food altered the situation.

In this age of technical progress the main problem is the effect of inventions on the relative shares of capital and labour, but this question has already been discussed in an earlier chapter. Again, the results that follow from purely economic circumstances are not always the ultimate results, for in these days distribution is effected by social policy as well as by economic circumstances. Wealth is redistributed by means of taxation. Incomes from rent and interest are taxed for the benefit of the wage-earners, and thus the ultimate tendency will make the relative share of the National Dividend falling to labour likely in the future to increase, rather than to decrease.¹

14. Social Effect of Present System of Distribution

The present system of distribution is not ideal, but it leads to action which tends to improvement. Equality of income may be taken to be an excellent aim when it

¹ A more advanced analysis of the effect of an increase in the supply of a factor on its absolute and relative share of the National Dividend would require to take into account its elasticities of demand and substitution. See Hicks: *Theory of Wages*, pp. 115-17.

does not clash with more important aims; it is not difficult to show mathematically that equality tends to maximise human happiness, if certain reasonable assumptions are made. The present system fails to reach its own possibilities in three ways: the man who has formerly gained by its imperfections retains his advantage, through the power which money gives him; the high pay due to relative scarcity is not a payment to merit; the beneficial action of free competition is hindered by natural and artificial economic friction. The first flaw is serious; its effects are cumulative through many generations; it is not too much to say that much present misery is due to injustice which occurred nearly two centuries ago. Rich men, however, are usually extravagant (from a normal standpoint); taxation of such men is also an important factor; there is hope that, in the future, more money will be forced into productive uses or will pass to the State.

The anti-social effect of large fortunes is intensified by the fact that "capitalists," as they are termed by the modern Marxists, often use their power to create artificial scarcity, mainly of commodities or capital. There seems little doubt that rich men can invest their money in ways which are deliberately anti-social; the best shares of rich companies tend to fall under the exclusive control of rich men. Artificial monopoly has become a sinister feature in American trade, and shows signs of increasing significance in this country. The natural scarcity of employers and of certain forms of labour should break down in the future, for education will provide a large class of potential employers.

The present system of distribution has much to commend it. Perhaps it is the most favourable possible system in relation to production, under present conditions. The stimulus of pure profit to employers, and that of net product to workmen have a favourable effect on production; there is also a certain rough justice. Were competition perfectly free, it seems certain that the system would

be still better, especially if combined with an intelligent regard for those men whose product will not earn them a living wage. The system has given us the most marvellous material civilisation the world has seen.

The defects in the system have led to the most shocking abuses; these were most marked about a century ago, unless we agree that the system was responsible for the world war. These defects have led to the most violent attacks on the system itself.

15. Socialism

The term "Socialism" has now come to mean almost any form of dissatisfaction with the present system, but there are two main groups of socialists. There are those who are not fundamentally dissatisfied with the present system, but who would gradually mould it so as to obtain better conditions for the working classes as against land-owners and employers, especially those who control much capital. If their general aim is to concentrate production and distribution in the hands of the State, they are called collectivists.

The other type is represented by the communists: these are so critical of the present system that they would destroy it completely and replace it by some form of co-operation. Some of the most attractive and some of the most selfish of socialists have belonged to this group. The syndicalists in the early part of this century suggested the overthrow of society by the "general strike"; many of their ideas were taken over by the shop-steward movement and the guild socialists; the latter suggested a modified reversion to the medieval guilds, in which industry was controlled by the guild members; a building guild was formed to carry out building schemes, but was unsuccessful. The high ideal towards which the better communists are striving is "From each according to his powers; to each according to his needs."

Communism seems at present to be an impracticable ideal; its failure would seem inevitable, until human nature has been so modified by moral forces as well as by industrial experience that men would sacrifice themselves for such an ideal. Already, however, it has stimulated various experiments of the greatest value and interest; they seem to show that an industrial community can be founded and can work, for a time, if the conditions are peculiarly favourable; sooner or later it is blighted by the selfishness of human nature.

16. Co-Partnership and Profit-Sharing

The problem is best attacked piecemeal; almost every socialistic experiment falsifies the hopes of the promoters while it provides a valuable guide to further effort. Thus attempts have been made to bridge the gulf between employer and workmen by a system of co-partnership. The workman receives (usually) a certain wage, and obtains a percentage of the final profits. He is encouraged to invest his share of the profits and thus become a shareholder; representatives of the workmen may also be given a voice in internal management. In those rare cases in which the experiment is fully successful the result is an increased production, for the workman has a direct interest in his work; in a small business in which an intelligent employer has the full confidence of his men the experiment often succeeds. When the men have no voice in internal management the system is called profit-sharing. One defect is that the workmen naturally object to sharing in losses.

17. Collectivism

Profit-sharing is suspected by the thoroughgoing collectivist, as being a palliative. State management aims at obtaining the whole of business profits. Consider the case of coal-mining: some mines are worked easily, producing a very large surplus over the net product of the

marginal mine, which fixes cost to the consumer. The collectivist might argue that if the industry were State-managed, it could afford to consider total expenses when fixing price; the State could afford to sell at a little less than the average price, and still make a small profit; control over production and sale might be necessary, as the lower price would stimulate demand and raise marginal costs. Alternatively, the State could produce the same amount as would be produced under private ownership, sell at marginal cost, and apply the profits to relief of taxation. By either method, profits would be transferred from private owners to the people as a whole. The collectivists claim that this transference of future profits would be equitable, for marginal costs have increased owing to the needs of the community.

There are two objections to this argument: first, an employer and even the directors of a company are more immediately interested in their particular business than would be a combination of men whose qualities make for efficiency in a Civil Service. Government by bureaucracy has the defects of company management in greater degree. An employer is ruined if he makes many mistakes, and yet a developing industry demands initiative; he is judged by results, and is displaced if he does not produce the right articles in the right quantity. The State must do so much work that it must do everything by rule and precedent; a State industry would almost certainly fall into the hands of safe men who can do things moderately well, but who are temperamentally unfitted for the task of guiding industry into new directions. Experience has shown that in a bureaucracy the alert and enterprising man is discouraged; in competitive industry such a man explores new methods and may obtain results of the highest value. Such a man is to-day a benefactor to the community; if he makes a mistake he may lose all; if he makes a real discovery his work is liable to be imitated

by less enterprising rivals to the advantage of consumers. It is on such pioneers that possible profits exert the greatest attraction.

Again, collectivism would probably have to dispense with a valuable index to the state of the market. We have seen reason to believe that, within limits, the price of a commodity when fixed by competition corresponds to a position of maximum satisfaction; the law is not absolute, but it seems probable that a chance variation from the market price is more likely to diminish than to increase total satisfaction. When a price, settled automatically without trouble, presents such advantages as does the competition price, it should not be discarded lightly. Now State prices tend to be fixed by law and are altered with difficulty; thus production may be much greater or less than is warranted by current conditions. In the former case there is waste; in the latter, industries may be hampered or individual satisfactions needlessly checked.

The whole subject is fiercely controversial, and the precise degree to which nationalisation should be carried is a matter of individual opinion. Further, the concentration of large-scale industries into few hands may make competition impossible; when a trade has become a trust-owned monopoly, American experience seems to suggest that some form of control is essential; the choice then seems to lie between State control and full ownership. Certain industries, *e.g.* the Post Office, are efficiently managed by a bureaucracy, and it seems that other trades which have become a matter of mere routine might be similarly owned. Each case should be judged on its own merits.

18. Tendency to Nationalisation

There seems to be a drift towards the nationalisation of certain industries. War experience has been useful; the lessons learned during the control of the coal supply may markedly affect future policy. On the whole, it seems

best to say that State ownership should be limited to those industries which are already monopolised and ready to be taken over without change in essential method. Further experiments seem almost certain; it is highly important that they should be confined to the industries in which success is most probable; limited nationalisation may then be an important solution of many industrial problems. Under such conditions, nationalisation brings no essential change, for it would be applied in those industries in which competition had already given place to combination.

Competition has also been attacked in another manner, *i.e.* by co-operative societies. Co-operative stores have been remarkably successful. They consist of members who combine to form societies managed by elected representatives. The employer is eliminated, economies are effected, and the result is that a society can usually pay a substantial bonus on sales; the members thus receive the profits themselves. Such societies have not only cheapened the goods used by the working classes, but have brought down the exorbitant prices often charged by shopkeepers in a village or small town.

19. Co-operation

Co-operation has been less successful in production. It seems to provide no substitute for the entrepreneur: trades susceptible to company management may be successfully carried on, but in the production of ordinary commodities the moderate pay of a co-operative manager has not usually attracted the type of ability which succeeds in a private business. Perhaps the attempt to spread the work of the entrepreneur co-operatively among a number of men will in future be undertaken by new methods rather than by co-operation in the old sense. The huge production of the C.W.S. should however be noted.

Future progress will probably be a growth rather than a deliberately controlled movement. Especially in England

the nation seems disinclined to experiment with a totally new social system; yet there is a movement away from the old capitalistic individualism. Each group of reformers has grasped a partial truth which, within limits, is being put into practice. State and municipality control, more and more, certain routine businesses; co-operative societies are meeting the entrepreneurs on their own ground. In these ways the old system is being partially replaced by others which, in certain directions, have proved their superior worth.

Capitalism is still supreme over the greater part of the field, and it seems wisest so to utilise reforming energy as to direct it towards the reform of the prevailing system, rather than to its destruction; if it is essentially bad it will be destroyed by the march of events.

20. Influence of Total Product

The share of each man will tend to be increased if the total product is increased; if all men redouble their efforts, the share of each will be greater.¹ On rare occasions, a small group may temporarily improve its position by a "ca' canny" policy; such action is anti-social, and will not permanently serve the purpose even of those interested. Overwork is an evil; overtime may be equally bad; the deliberate withholding of a man's best work is a worse social evil than either. Again, the present distribution could be improved by sweeping away all barriers to equality of opportunity. Whenever a class holds a monopoly, natural or artificial, it obtains an unfair share of dividend. Education will probably have a great effect in abolishing the natural scarcity of employers and other fortunate classes; the wider diffusion of wealth is to be welcomed,

¹ Other things remaining equal; but it does not follow that if the National Dividend is doubled the share of each individual will be doubled. At the same time the possible share of each does depend on the size of the "heap."

for otherwise the possessors of capital will be in a commanding position.

The present system is based on our laws of property and inheritance: these encourage the growth of capital, but tend to increase differences in income. Super-taxation and death duties may have valuable effects in redressing the balance; so far they tend to remove some of the vital objections to capitalism; but such measures must be cautiously applied, or saving will be seriously checked.

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CHAPTER XVI

ECONOMIC ACTIONS OF GOVERNMENTS

1. Function of the State

This is a very complex and controversial topic. What should be the economic function of the State transcends the limits of economic theory. It is beyond dispute that the State must provide security for life and property, and enforce contracts, and in the nineteenth century this was, generally, accepted as its sole function. Since the General Election of 1906, when a Liberal Government, pledged to the then novel principle of social reform came into power, the State has developed functions considered neither practicable, nor desirable, by the *laissez-faire* nineteenth century. The State has not only pledged itself to expend large sums of money annually on the social services, but in recent years it has interfered with, and regulated industry to an extent, both directly and indirectly, that would have been thought impossible in 1914. State regulation of industry, usually known as "planning," has been developed less under the influence of socialistic ideas than in the special circumstances of the post-war world. England, and other countries too, have had to adjust themselves to new, and very unstable conditions. Adjustment through the gradual working out of natural economic forces has not proved possible or satisfactory in the new conditions. There has therefore been a strong demand in most countries for the active intervention of the State in industrial affairs. Whether this policy will prove good or bad in the long run is a matter on which opinions are divided, but a large number of people now agree that it is the duty of the State to maintain a reasonable standard of living for its workers both directly, and indirectly through measures designed to offset the periodical depressions of trade.

2. Remuneration of Officials and Servants

It has been noted in an earlier chapter that the marginal productivity theory of wages does not apply, except very indirectly, to the salaries and wages of public officials and servants. In some cases a marginal valuation of services is obviously impossible; in other cases, even if a valuation were possible, it is not held desirable, for it is widely accepted that Public Authorities should pay a wage above the competitive level so as to set a standard for private enterprise to approach. On the other hand many of the higher officials may be paid a salary less than their real worth to the community. A valuation, however, is extremely difficult because service under a Public Authority has advantages—holidays, pensions, security of tenure, etc.—which are not easy to capitalise.

3. Laissez-faire

No wise government would intervene in the economic life of the country unless the advantages gained were more valuable than the cost of intervention. The Manchester School of economists (the classical economists between Ricardo and Mill) held that government intervention in itself was bad; that not only was the expense of intervention a pure waste, but that interference with industry must in itself lead to decreased efficiency.

The watchword of the Physiocrats had been "*Laissez faire, laissez passer*." This expressed the desire of many merchants to make what they pleased without State intervention, and to transport their goods from place to place without vexatious restriction. Adam Smith continually points out that every man is the best judge of his own interests and that the welfare of the country as a whole would be best forwarded by the removal of obstacles which government then placed in the way of trade; he took governments as he found them, and could not conceive of existing governments as exercising wise control over industry.

Economic individualism was to him the essential condition of welfare. "Every individual is continually exerting himself to find out the most advantageous employment for whatever capital he can command. It is his own advantage, indeed, and not that of the society, which he has in view. But the study of his own advantage naturally, or rather necessarily, leads him to prefer that employment which is most advantageous to the society."¹

4. The Manchester School

The doctrine of individual freedom was crystallised into a system by the Manchester School and made to justify industrial things which would probably have been denounced by Smith; the leading economists were not completely carried away by the doctrine of the sufficiency of individualism, but callous manufacturers pretended to find in Political Economy a full justification of their hardness towards employees. The new, hard individualism condemned the Factory Acts; the greater economists defended them, as Smith would probably have done in similar conditions.

The modern reaction against the Manchester School seems to many to have gone too far; there is a great deal of truth in the assertions that if a man is successful in his own business he has performed a useful public act, and that a government which tries to control business is more likely to do harm than good. If an employer makes a large fortune he has probably done so by making the right goods at the right time in the right quantity; if a doctor earns large fees it is a sign that doctors like him are relatively scarce and that the country would be pleased to have a better supply. An employer

¹ *Laissez-faire* theory assumed a natural harmony between the public and the private interest. In the long run, and in a broad sense, the theory is not without truth; unfortunately, however, all men are not equal, either in a natural or an economic sense, hence the theory could lead, and actually did lead, to grave injustices.

may make money out of undesirable goods, but governments are rarely more decidedly moral than the people they govern. The sound reasoning and general observation of the *Wealth of Nations* are not yet out of date, for the pre-1914 economic structure had a degree of flexibility, and a power of self-adjustment to changes of conditions that is lacking to-day.

5. Usefulness of State Action

It is true that the sphere of justifiable State interference is probably extending. Perhaps the State is most useful as a means of providing standards; this is positive work of great value; the laissez-faire formula does not preclude positive government action, for it only seeks to discourage active interference. The State provides standards of weight and measure, of purity, *e.g.* milk, and of money. It may at some date provide an invariable money measure; in England it already prepares a periodical index number, which shows the variation of price levels; our various departments, *e.g.* the Board of Trade, supply useful information as to trade conditions. The Government intervenes in labour disputes, and fixes a minimum wage in certain industries; in past times the wages of labourers were fixed by magistrates, and in various ways such regulation by the State is again in evidence.

The State may provide the necessary capital for useful work which is on too large a scale or too inconvenient for company management, especially if there is any doubt as to financial success. Roads, bridges, etc., are usually constructed by government; they may absorb enormous amounts of capital, but the total satisfaction they offer is greater still. Again, the State can carry through schemes of afforestation or construction of permanent works, while an individual or company would not care to wait for the financial return. So also a local authority may construct a tramway because it gives a high total satisfaction to the

residents, though there may be a financial loss. The State may also give bounties to an industry, either because of its importance to the nation (*e.g.* food supply in time of war), to stimulate a growing industry, or to aid an undertaking which gives a high total satisfaction to the people, *e.g.* a subsidy to mails.

An industry may make a large profit at the public expense; a trust may so control a single industry that it obtains a monopoly; such an industry may be ripe for nationalisation. Marx seems to have been wrong when he foretold the increasing concentration of industries, so that the time would come when the proletariat could step in and seize the productive system; his prophecy, however, is partially fulfilled, and as trusts become more prominent, nationalisation becomes a practical problem in an increasing number of industries. America has sought to control her huge trusts; Germany has put greater faith in nationalisation; the question of control or ownership of large-scale industries seems to be one of future prominence in this country.

The protection of new inventions has always been regarded as justified, not only because a man has a right to remuneration for his own creative work, but because inventions might not be forthcoming if they were not adequately rewarded; patents are the just reward for enterprise. More controversial is the detailed control which our government has exercised in late years. The activity in regard to sick and unemployment insurance and to labour exchanges is not universally approved; government control over education and public aid is more widely accepted, though there is much criticism of detail.

The State also undertakes work which must be paid for out of the national dividend, but which cannot be said to lead to an improvement in the quality or quantity of production. The Army is the best example.

6. The Case for Planning

State interference in economic matters in pre-war years was comparatively mild. Since 1918 it has assumed a new aspect, a far-reaching attempt to regulate and control the economic life of the nation. Planning has been carried to much greater lengths in some parts of the Continent than it has in this country, but even in England, *laissez-faire* is now comparatively dead.

The reason for this is that new forces have created a new post-war economic world.

In England, and in most advanced industrial countries, population has become approximately stationary, and a falling birthrate means that a smaller proportion of the family income is expended on commodities having an inelastic demand (so-called necessities). More money is therefore available for goods having an elastic demand (so-called luxuries). This tendency has been strengthened by the fact that owing to the extension of the Trade Board system, the insurance acts, and trade unionism, the working classes now enjoy a larger share of the product of industry. The result is that demand has become highly unstable.

This change in the character of demand has affected industry in various ways. Clearly, the greater the fluidity of demand, the greater is the difficulty of anticipating the future needs of the consumers. This problem has been intensified by the rapid march of technical progress since 1914. The size of the business unit has expanded considerably; the time structure of production has been lengthened; and the proportion of overhead to total costs has greatly increased. Mass production has meant that not only has organisation become more rigid and less adaptable to changing conditions, but that the supply of commodities has become inelastic, especially with respect to a fall in demand.

On the one hand we have a demand that is becoming more and more fluid and variable, while on the other hand, supply tends to become rigid. The problem of redundant capacity has thus arisen—the problem of shifting resources from industry to industry according to changes in the character of demand.

In the nineteenth century this problem of adjustment was a minor one. The greater stability of demand, and an expanding population, confined the problem within narrow limits. The relatively small scale of business had a more flexible organisation than the present large-scale joint stock company. Fixed capital charges occupied a less important place in total costs, and wage rates were comparatively fluid.

To-day, many people argue that an equilibrated economic structure is impossible now without State planning. (This does not imply a socialised state. English experience has shown that State planning is possible within the limits of private enterprise.) They argue that adjustment to changing conditions through the free play of natural forces is economically wasteful, and much too slow for the present dynamic age. They point out that the multiplicity of conflicting interests in the large joint stock company, and the vast sums invested in specialised fixed capital make voluntary reorganisation impossible on the scale that is necessary; and finally that the rigidity of wage rates not only increases the difficulty of the basic industries to adapt themselves to new conditions, but that it impedes the expansion of new industries. Rigid wage rates have had two effects in the post-war years. In the first place they have diminished the demand for labour in the older established industries; secondly, high wages in the auxiliary industries, transport, for example, have hampered the expansion of new industries.

The result of the post-war depressions, and the dislocations of industry has been that the State has provided and

supervised schemes of reorganisation for certain industries among which may be mentioned the coal and electric supply industries, and the marketing schemes for agriculture.¹

7. Objections to Planning

State planning has not been accepted by every school of thought. Some of the objections raised against existing schemes concern matters of detail rather than general principles. One very important school of thought, however, has traced practically the whole of our post-war troubles to State interference in economic matters, and sees the remedy for these troubles, not in an extension of State control, but in a return to the principles of pre-war economic liberalism. For this school of thought, the very rigidity of the economic system, acknowledged by all parties to be the fundamental cause of our industrial troubles, has been caused by our departure from *laissez-faire* principles. Professor Robbins has argued that it is the policy of encouraging monopolistic control of markets, of setting up pools and restriction schemes, of granting bounties and promoting marketing schemes, of State regulation of wages, etc., that has created an economic structure much less capable of a rapid adaptation to change than was the older more competitive system.²

8. Free Trade

State control of economic life is also exercised indirectly by regulation of foreign trade. As this topic can only be discussed adequately in connection with the principles of international trade, only the general aspect will be dealt with in this chapter.

¹ A full account of these developments is given in Lucas: *Economic Reconstruction and the Control of Competition*. Rather: *Planning under Capitalism*. Loveday: *Britain and World Trade*.

² Robbins: *The Great Depression*.

The real case for free-trade is simply stated. When two men exchange commodities we may assume that each obtains a surplus of satisfaction. There is no increase of material wealth, but it is more economically distributed. Neither party is obliged to barter; if both barter, both will gain satisfaction. This principle is not affected by distance or by national boundaries. If goods are bartered for home goods, each party gains. If goods are bartered for foreign goods, each party gains: an English merchant would not obtain goods for which there was no demand in England; if successful he has correctly gauged the commodities most in demand.

Now from one point of view trade between different countries is practically barter; if an English cotton manufacturer sends goods to Spain, he receives a promise to pay, called a bill of exchange. It will be seen later that such bills do away with the need of transferring money at each transaction. As a consequence, the value of the goods exported from England will, when all things have been taken into consideration, be equal to the value of the goods sent into England; this will be elaborated in a later chapter.

Now these goods will tend to go from a country where they are abundant to one where they are scarce. As before, there is no increase of material wealth when exchange takes place, but the traders in each country obtain increased satisfactions. Oranges may be abundant in Spain, while cotton goods are easily and cheaply made on a large scale in this country; the marginal utility of oranges may be low in Spain, but high in England, while the reverse holds good for cotton. Thus large numbers of oranges may be sent to England in exchange for large amounts of cotton goods, in such a proportion that each country is well satisfied by the process; individual traders reflect the desires of their customers, and it is probable that if the individual traders are satisfied by an exchange,

such exchange will, as a rule, be beneficial to their country as a whole.

Differences in natural productivity are common; the economies of large-scale manufactures tend to localisation; thus every country holds certain goods in superabundance and is sorely in need of others; hence the sum of human satisfactions is increased by international trade. Again, if a commodity is naturally abundant in a country it is probable that this country possesses peculiar facilities for growing or making it; the same arguments for division of labour within a country hold for the distribution of industries between different countries. It is hardly doubtful that human satisfaction is normally maximised by a full utilisation of national advantages for the production of particular commodities, if trade is free and open between different countries. It is plain that Spain should exploit her advantage for orange growing, and England that for cotton manufacture; the argument holds also in cases where the differences in productivity are less striking. Even when one country can do all things better than another, it is most probable that trade will flourish if communication is easy; the efficient country would satisfy its wants most efficiently by applying its available capital and labour to those branches of production which would give the greatest return, *e.g.* those for which the country was initially suitable and which were subject to increasing returns; its other wants could then be met by giving its excess produce for things which it could have made cheaper than the country from which it is buying them. Many goods which could have been cheaply made at home are bought from foreign countries; they would, however, require the application of labour and capital which is now put to still better use.

Free-traders assert that all attempts to interfere with the natural development of production and trade will defeat their ends; protectionists believe that certain industries

should be sheltered behind a tariff wall, lest they be killed by foreign competition. Free-traders do not deny that such protection may aid a particular industry; they do insist that such a beneficial result will be more than balanced by a sacrifice at another point of the economic structure.

9. Some Protectionist Fallacies

From a standpoint purely economic, the free-trade argument is unanswerable. As Wicksteed once remarked, protection is a device for making everybody rich by making everything dear, and it should be obvious, on reflection, that every obstacle placed on the free movement of goods intensifies that relative scarcity of means to ends which is the primary object of economic activity to overcome.

The free-trade argument, however, is so general, and considerations other than purely economic so usually intervene,¹ that the controversial protectionist has little difficulty in presenting special cases which are not easily countered by the general argument.

In the case of the protectionist Corn Laws, the task of the free-traders (the Manchester School) was comparatively easy. Foreign corn was subject to a heavy duty; this was reflected in high prices, and the misery of the lower classes was a sufficient argument against protection. The expectations of the classical economists that all the world would follow our example were falsified. Most foreign nations returned to protection; they deliberately strove to stimulate their industries by means of tariffs.

Adam Smith fought a type of protection based on crude ideas which have not yet quite disappeared. Men believed that imports drained the country of bullion, and that exports were desirable because money was brought into the country to pay for them; Smith combated the crude

¹ Political, racial, and social.

fallacy that wealth was synonymous with money; he showed that money was useful only so far as it bought desirable goods. His argument against "restraints upon importation" is similar to the general argument outlined above; he showed that the free importation of desirable foreign goods was likely to stimulate a corresponding export.

Smith, however, defended the Navigation Acts, which aimed at the protection of British shipping, on the ground that "defence is of much more importance than opulence." He showed also that when an internal excise duty existed on a commodity, it was only just that a corresponding customs duty should be made on the imported article.

The argument of those who believed that protection would make a country wealthier by stopping the drain of gold gained apparent support from the idea that home trade is more valuable than foreign, for the cost of transport is saved. The fallacy is obvious: a merchant would not choose foreign trade in preference to home trade unless his gains sufficed to pay for the cost of transport; the fact that trade does exist in spite of this handicap is only another proof of the beneficial effects of international trade.

Mill was a firm believer in free-trade, but he argued that under certain conditions protection might be useful. A fully developed industry can stand alone; a developing industry may not obtain a footing unless it is aided at first. An industry may be thoroughly suited to a given country, but the initial risks, difficulties, or expenses may be so great that it will make way slowly, if at all. If it is protected against foreign competition by a tariff on the goods produced, it may develop behind the tariff wall, and then dispense with artificial aid. The practical application of this principle is very difficult: it is far easier to begin a tariff than to remove one, for the vested interests favoured by a tariff are strong and usually well-organised. Many German and American economists who believe that protection has accelerated the development of "infant

industries," especially those subject to increasing return, now hold that the time has come for tariff reduction.

The convinced free-trader, however, allows of no exceptions; he points out that most wars are economic in origin, and that tariffs breed hatred. He denies that protection will lead to a more balanced development, unless at great sacrifice of total production; if an essential industry is threatened, he would prefer a direct subsidy to a protecting tariff, for the nation then knows the price it pays for the desired object. He criticises the protection of infant industries, for if an industry were suitable it would certainly develop sooner or later without help; a tariff is simply a gift to the manufacturers which is apt to become a vested interest.

The subsidiary arguments of free traders so powerfully support the main argument that it seems plain that tariffs should never be imposed without the strongest possible reasons. Through rise in prices they weight the scales against the consumer, and protect a class who will be the more able to exert a corrupt influence on the tariff-making body, *e.g.* a government department. They lead to an unnatural arrangement of firms and industries. Inefficient firms (and industries) are kept in existence; efficient firms may fail if they have to pay highly for protected raw materials, etc., while their own products are not protected; corrupt incompetence may flourish. Again, capital and labour are attracted from more competent businesses, to be used in a business where they obtain an artificially high return at the expense of consumers; an artificial stimulation of one industry must lead to depression in others unless there are important (and unlikely) secondary effects. Lastly, the bracing effect of competition, to which much modern development is due, is liable to give place to a slow degeneration behind a sheltering tariff wall. From the world standpoint, as distinct from the national, the argument for protection is insignificant.

10. The Case for Protection

The protectionist policy of the later nineteenth century was supported by an argument which carries some weight. Just as division of labour may lead to over-specialisation, so may complete freedom of trade. One country may become exclusively agricultural, another manufacturing, and so on. Protection may redress the balance: a country may be willing to sacrifice a little material wealth, either for the sake of security of supplies in war time, or for the desire for a well-balanced economic life; an industrial nation might conceivably be starved into surrender.

The great protagonists of this argument, which is sometimes called the cultural argument, were List in Germany, and Carey in America. It is true that an over-specialised individual is an incomplete entity, and extending this theory from the individual to the nation, List argued that productive powers were of greater national value than exchange powers.

The cultural or educational argument clearly transcends the limits of Pure Economics, though incidentally it raises the question of whether the advantages are always worth the price that must be paid.

A stronger, though again not an economic, argument was advanced in favour of protection at the beginning of this century. It admitted the economic superiority of free-trade, but contended that under it there is an inherent tendency for industry to move towards the site of its raw materials, and that this movement could only be arrested by regulative measures. In other words, if we wish to remain citizens of the British Isles we must pay a necessary price for living there in much the same way as we pay for the privilege of residing in a particular suburb.

A more recent argument of this type is the racial one. International free trade, and cosmopolitanism with which it is allied, place the Western nations in danger of having

their standard of living and civilisation lowered by the competition of the less cultured nations of the Far East. Our Western heritage can only be preserved intact by a rigid nationalism, which on its economic side involves protectionist barriers.

In passing judgment on both principles it must be remembered that neither can be applied to concrete situations in an absolute sense, and that what is valid in one set of circumstances must be accepted with qualifications when circumstances change. In abnormal circumstances, a temporary benefit may accrue from the adoption of protection as was the case in England in 1932,¹ but even here the ultimate effects may be very different from the short-period results.

The abnormal unemployment in England since 1926 has revived the controversy in a particularly sharp form with special reference to contemporary English conditions. Between 1929 and the General Election of 1931, Protection was championed as a means necessary to preserve the English standard of living; as the only remedy for unemployment; as a weapon of retaliation; and finally, as necessary in order to avert the utter ruin of English agriculture.

There was nothing in these arguments either in support or in opposition to protection radically different from what has been already said on the subject, but as local circumstances forced the arguments down from the general to the particular they may be briefly reviewed at the expense of some repetition.

No country that is not economically self-contained can completely divorce its standard of living from the rest of the world, but as a matter of fact, apart from those engaged in agriculture, the workers whose standard of living is most seriously threatened in this country are

¹ Assuming for the moment that the claim made is sound.

workers employed in the export trades; and no system of protection can directly affect neutral markets.¹

The argument for protecting the home market as a cure for unemployment is familiar enough, and it is perfectly true that unemployment in particular industries can be reduced by tariffs, but solely at the expense of industry in general, and this is especially true of a country that lives mainly on its export trade.

It need not necessarily follow that a tariff on imports would involve a reduction of exports, but we could keep up our exports only by redressing the balance with an increase in the amount of our foreign lending, which may, or may not take place, even over a comparatively short period.

One of the common arguments in favour of protection as a means to solving the unemployment problem rests on the law of increasing returns. If the manufacturer is certain of protection in the home market he will be encouraged to expand his scale of production, and the economies due to size of operations will at least offset any tendency of prices to rise on account of tariffs. But even if it could be proved that tariffs would have this effect, we only reach the "infant industries" argument in a new form.

But it does not seem at all clear that there is any necessary connection between protection and the scale of industry. In some cases tariffs do appear to have had the above effect, but in others the effect has been precisely the opposite. In any event recent experience does not suggest any close connection between tariffs and employment, but it does prove that unemployment can be relatively worse in a protected than in a free-trade country, during a particular world-wide depression. But perhaps the most forcible reply to the increasing-returns argument is that if

¹ This matter will be treated more fully in the chapter on International Trade.

large scale production lowers costs it will be undertaken without protection.

The case for protection for English agriculture is argued on various grounds most of which, however, are not purely economic. Whether it is desirable to protect our home-grown supplies of food on the assumption of another "war to end war" is a matter of opinion, but it is a matter of fact that a price must be paid for such a choice. Protection for English agriculture is often advocated on the ground that it is desirable from a cultural point of view to distribute our population more evenly between country and town, than is the case at present.

Agricultural depression has not been confined to England since the termination of the war: it has been as marked, if not worse, in protected North and South America, and in Australia. Since 1914 agricultural production has been speeded up in a manner similar to that of industrial production, and agricultural production supplies a demand that is fairly rigid. The assumption that the post-war English agricultural depression has been caused by free-trade rests, therefore, on very uncertain ground.

Agricultural protection would undoubtedly benefit the farmer, but whether he would be able to hold his gains in the long run is less certain. On the one hand the tendency would be for rents to rise, while on the other hand the labourers would demand, and probably enforce, higher wages. That the community as a whole would be impoverished can admit of no doubt, because the fostering of agriculture by artificial means would result in resources being diverted from alternative channels in which they could be specialised more effectively.

Some of those who have worked to introduce protection into England freely admit the free-trade argument in the abstract, but believe that one-sided free-trade is disadvantageous to us, and favour tariffs as a means of

retaliation and bargaining power. Many believers in free-trade support such duties in the belief that the original tariffs will be forced down, but experience rather suggests the opposite tendency.

11. Public Works

Another important, and, incidentally, very controversial aspect of State intervention in economic matters is the initiation of public works by the State.

In any circumstances the State must undertake a large amount of public work either directly, or indirectly through local authorities. Public works of this kind include the construction of docks, harbours, roads, waterworks, afforestation, schools, etc., and it is frequently argued that public authorities should so arrange their programme of public works that they serve to offset the periodical fluctuations of trade, that is to say, that the output should be at a maximum in a trade depression, and at a minimum in a trade boom.

The argument in favour of a public works policy runs roughly as follows:—A trade depression begins in the industries producing capital goods; if, therefore, at the first sight of a depression, public authorities begin to spend large sums on public works, and consequently on capital goods, employment will be maintained in the capital goods industries. This in turn will arrest the fall of prices of consumption goods and unemployment in those industries. The expansion of public works need continue only until the banks are in a position to lower the rate of interest and thus stimulate private enterprise once again. The expenditure on public works can be gradually diminished as private industry revives.

The subject is still controversial. No one will deny the fact that public authorities should so arrange their programmes that they supplement, rather than compete with private industry for the services of factors of production.

On the other hand there are difficulties. Unnecessary work may be undertaken, though that is less likely to be the case in the future than it has been in the past. Secondly, public works on a vast scale may be executed at an uneconomic cost, though this would be offset to some extent by the reduction in unemployment expenditure. Thirdly, there is always the difficulty of deflecting capital and labour back to their normal channels; so far as it is true that recovery is hampered by rigid wage rates, a public works policy is more likely to retard than to assist recovery.

12. General Principles of Taxation

The work of the central government, necessary, beneficial, or dubiously useful, is mainly paid for out of taxes. Local authorities usually levy rates; in this case a rough estimate is made of the sum of money which is required, and the amount payable by each person rated is defined by the rateable value; if a man's property is assessed at £20 net he will pay £10 if the rate stands at 10/- in the pound. A tax is often laid on a commodity, transaction, etc., and it may thus be evaded by any one who does not buy the particular commodity; thus its amount can usually only be roughly estimated. Again, some payments to taxing or rating authorities are of the nature of direct payment for benefits received, *e.g.* in the case of a city tramway, a State railway, or telegraph service. In most cases there is no such exact relationship between payment and benefit.

The payment for special purposes, *e.g.* tramways, cannot be fully considered here; it is enough to say that there are all gradations between the city (say) which wishes to make a maximum profit out of its monopolised tramway system and that which works it permanently under cost, so that the consumers' benefit enjoyed by those who

use the trams much more than counterbalances the total financial loss; thus it is expedient that roads, bridges, schools, water supply, etc., should be supplied free of cost.

Neither can miscellaneous payments be considered; such would include items such as fees and the rents of government-owned land.

Our problem is to find the general principles on which the total burden of taxation should be shared among individuals. Taxes and rates cannot pretend, as a rule, to fix the cost of State services at the level they would reach under free competition; in unsettled times, a rich merchant might pay a high price for safety of person or goods, and each form of service might be assessed at a money price in this way; rich merchants would compete for retainers and their cost would be governed accordingly. The State controls many such activities which it is not desirable to leave to competition. Yet the State cannot estimate the relative worth of services to individuals even to an approximate accuracy. Under the present rough systems of taxation it inevitably happens that some men pay large sums of money for services which other people receive, while others receive what is practically a free gift from the State.

Adam Smith believed that some measure of service received was measured by a man's income. It seems better to avoid the attempt to obtain payment for services rendered; there is a modern tendency to regard a State more and more as a single unit. State action which leads to a greater total happiness or to a fairer distribution of desirable things receives wide support. The rich man has obtained his wealth under the protection of State laws and as a consequence of the abundant productive life around him. Thus it is increasingly felt that the community as a whole is responsible for the removal of the meaner and more distressing blots on the social system.

13. Adam Smith's Maxims of Taxation

A perfect system of taxation would lower the burden of taxes to a minimum consistent with efficient government, and also divide taxes equitably among individuals. The four canons of taxation found in the *Wealth of Nations* may still be read with great profit. Smith's principles may be summarised as equality, certainty, convenience, and economy.

1. "The subjects of every State ought to contribute towards the support of the government, as nearly as possible, according to their respective abilities; that is, in proportion to the revenue which they respectively enjoy under the protection of the State. . . .

2. "The tax which each individual is bound to pay, ought to be certain and not arbitrary. The time of payment, the manner of payment, the quantity to be paid, ought all to be clear and plain to the contributor, and to every other person. . . .

3. "Every tax ought to be levied at the time, or in the manner, in which it is most likely to be convenient for the contributor to pay it. Taxes upon such consumable goods as are articles of luxury, are all finally paid by the consumer . . . it must be his own fault if he suffers any considerable inconveniency from such taxes.

4. "Every tax ought to be so contrived, as both to take out and to keep out of the pockets of the people as little as possible over and above what it brings into the public treasury, in the four following ways. First, the levying of it may require a great number of officers. . . . Secondly, it may obstruct the industry of the people. . . . Thirdly, (there are) forfeitures and other penalties. Fourthly, . . . it may expose them to much unnecessary trouble, vexation, and oppression."

To these maxims may be added two others: a tax should be productive, *i.e.* a large revenue should be obtained in a way that involves no crushing burdens on individuals; a tax

should be elastic, *i.e.* it should be an easy matter to vary at will the amount obtained; thus a 10 per cent. increase should be obtainable by a known rise in the rate.

14. Principle of Justice in Taxation

The views of the nature, and what should be the principles, of taxation vary as widely as the views on the nature and end of the State. So long as a full-blooded individualistic philosophy was generally accepted by the ruling classes, the function of the State was held to be that of "keeping the ring" for the free play of competition; hence taxation was regarded from the point of view of security only, a necessary provision for defence, and something which should be kept at a minimum level.

The advent of democracy after 1870 naturally changed the outlook, and during the last fifty years the theory has gradually gained ground and is now very widely accepted that the purpose of taxation is to effect a redistribution of wealth and to smooth away to some extent the extreme inequalities between the very rich and the very poor.

The principle of justice or equity in taxation has always been considered by theorists. It was on this ground that the eighteenth-century thinkers favoured taxes on luxuries: the individual could avoid them by refraining from consuming the taxed articles; and they are paid by the wealthy. Direct taxation, on the other hand, was believed to contravene the principle of justice because it was liable to lead to evasion and fraud.

This principle of equity led to the theory that taxation should be spread as widely as possible and yet press heavily at no particular point. Indirect taxation even on necessities was believed to inflict no hardship on the poor, because in theory, as the labouring population was held to be in receipt of subsistence wages only, it followed that taxes on necessities must be passed on in the shape of higher wages.

During the greater part of the nineteenth century a certain relation between direct and indirect was judged to be necessary to ensure a sense of responsibility in the working classes.

More broadly, however, by economists from Adam Smith to John Stuart Mill, justice was held to be best met by the principle of proportionality in taxation. Uniformity in taxation was admitted to discriminate unfairly between rich and poor; this is obvious from a reflection over the effects of a uniform tax on any article in general use. If the amounts consumed are the same, the millionaire and the labourer bear the same burden. The merit of proportionality lay in the fact that it left the relative positions of the various classes the same after, as before, the tax.

The principle of proportionality, however, did not satisfy the ideas of justice of a more democratic generation. The defect in the principle of proportionality was that it did not lead to that equality of sacrifice which is now regarded as essential to social justice, and the present century has witnessed the application of a new principle,¹ supported by the theory of the diminishing utility of income as it increases in amount.²

15. Progressive Taxation

Even when taxable incomes are subject to such deductions as the exemption of the minimum for a tolerable existence, it remains true that the normal man who pays £1,000 on £10,000 (measured above the minimum) sacrifices far less than he who pays 2s. on 20s. excess over the minimum. The Law of Diminishing Utility is invoked in relation to income. The wants of a poor man are urgent,

¹ Only its application is new. It was advocated by Montesquieu a generation before Adam Smith.

² For some interesting observations on this point, see Robbins: *Nature of Economic Science*, pages 120-122.

while the rich man has few compelling wants which require money for their satisfaction; if the former loses a tenth of that part of his income devoted to comforts, he normally sacrifices more than the other who loses the same proportion. Thus the highest incomes, it is argued, should not only pay a greater amount, but should pay a higher rate. This principle is also put into practice in our income tax: the super-tax on large fortunes promises to be a permanent part of the taxing system. There is the greater need for such a "progressive" income tax in that much taxation falls with greatest weight on the poorer classes, *e.g.* taxes on tea and tobacco. The Death Duties afford a successful example of progressive taxation.

Thus the productivity of a tax must often be sacrificed to equity. A tax on corn would bring in a great deal of money, and might yield a large proportion of the total revenue; the attempt to "broaden the basis of taxation" is made by men who wish to obtain more money from the poorer classes; such taxes involve great sacrifices on the part of poor men. Many single taxes may rightly fall heavily on the poorer classes; care should be taken that the whole taxing system, including local taxation, should be equitably arranged. There is no means of defining exactly the rate which should be paid by each person; we can only estimate very vaguely the amount of pleasure obtained by each successive increment (say) of £100, and so the rate at which super-taxation is assessed will vary with current ideas and with political conditions.

The maxims of certainty and convenience are often contradictory, at least in part. There is a broad and useful distinction between direct and indirect taxation. Direct taxation is imposed on those persons who are intended to bear the ultimate loss; thus the income tax is a direct tax. Taxes on commodities like tea and tobacco are indirect, for the consumer usually bears the greater part of the burden, as he is meant to, but the dealer must pay the tax in the

first instance. In past ages, uncertainty in regard to taxation might be a great evil: Smith believed that "a very considerable degree of inequality is not near so great an evil as a very small degree of uncertainty." To-day, there is no fear of the tax-gatherer in himself, for he is only the vehicle through which State commands are carried out, and he can no longer practise extortion on his own account. For this and other reasons, the uncertainty which was formerly so great an evil has almost disappeared. To-day, the income tax is so clear, so certain, and so definite in the manner of payment that most men prefer another type of taxation.

16. Indirect Taxation

Indirect taxation has many advantages; it is usually more convenient than direct taxation, though often less certain in the amount to be paid. An indirect tax automatically sifts out those to whom the tax in question would be peculiarly inconvenient; such persons may usually avoid it altogether by refraining from purchasing the articles in question. The average purchaser of tea or tobacco can purchase these commodities when and in what quantities he pleases, and thus pays the tax at his own convenience and in the amount he himself chooses. Further, the purchaser rarely knows what proportion of the purchase price is paid as a tax, and so the tax is not thrust on his notice; a man may obtain a high consumers' rent from his tobacco, and he will then willingly pay a higher price rather than do without; if the tax is hidden by being absorbed in the purchase price, it is paid with less reluctance by the normal man. The quantity paid is not "clear and plain to the contributor," but this is an actual advantage. The State obtains a large revenue, and each individual practically taxes himself.

Indirect taxes, however, often contradict Smith's fourth canon: they are often expensive to collect and they must

interfere to some extent with industry. It is often argued against a particular tax that it destroys capital and thus damages industry; all taxes, however, must have this effect, and the State calculates that the use to which it puts its revenues more than compensates for all the various losses occasioned. Such losses should be reduced to a minimum: when possible, a tax should be inexpensive to collect; it should displace as little capital as possible; and the method of collection should be simple and direct; the necessity for a large number of officials will greatly decrease the net return from a tax. Thus a taxing system which consists wholly of indirect taxes is wasteful.

17. The Incidence of Taxation

The most important question raised by taxation, both for the individual, and the community, is that of incidence, that is, who ultimately pays? The obvious intention of the Government levying the taxes is that indirect taxes shall be paid by the consumer, and that direct taxes shall be paid by the persons assessed; but it by no means follows in practice that the ultimate incidence of any tax can be anticipated in advance.

The problem bristles with difficulties, and only a partial account can be given here, as almost every statement requires qualification according to circumstances. We shall begin with one or two general principles, and then trace their application to the most important fields of taxation.

In the first place, a sharp distinction must be made between the immediate and the ultimate effects. Over a short period most taxes tend to fall on the persons and commodities on which they are levied. This is particularly true where the taxes are small in amount; where they are heavy, an attempt will be made to pass them forwards or backwards, and what will ultimately happen will depend on the conditions of supply and demand.

If a tax is to be passed forward, prices must be raised to the consumer, but this can only be done where the demand for the taxed article is rigid, and no substitute can be found for the article. On the other hand, if the demand is elastic, and if substitution is possible, prices will not rise by the full amount of the tax and part of the burden will be thrown back to the producers, unless prices can be raised by restricting the supply.

If a tax does not tend to make supply relatively scarcer, it is difficult to move it from the producers: it is paid by some surplus in some form or other. Mr. Hobson¹ extends this argument even to taxes paid by the consumer, arguing that the tax must be passed on from consumer to consumer until it finally settles on some surplus income. The theory is, of course, that surplus income, in whatever form it arises, is not a necessary economic payment required to bring together the requisite amount of the productive factors; in other words, so long as the whole of it is not taken in taxation, a tax on surplus income does not throw any part of the productive resources out of the supply.

The practical difficulty in this theory consists in defining precisely what is a pure surplus in the sense of a non-economic payment. So long as the marginal unit was regarded as the least efficient unit, and price as the payment necessary to keep this particular unit in the supply, the notion that all rent, and profits above the normal, were pure surpluses, non-economic payments which had no effect on price and supply, was easy to grasp. But we have seen elsewhere that the true marginal land, or entrepreneur, necessary to the supply may be earning high rent or profits, and that these payments must be made if the supply is to remain intact. This means that it is possible for much indirect moving of taxation to take place; but we shall return to this matter later.

¹ See Hobson: *Economics of Distribution*.

18. Incidence of Taxes on Commodities

In the terminology of Economics, necessities and luxuries are commodities the demand for which is either rigid or elastic.¹ A tax on tobacco, unless excessive, is immediately passed forward to the consumer in the form of higher prices. This is possible because the demand for tobacco is fairly rigid, and tobacco has no substitute. But it does not follow from this that the consumer necessarily pays the whole of the tax, or perhaps rather more accurately, bears the whole burden in a broad sense. If he has to pay more for tobacco, and does not reduce his consumption of it, he has less to spend on some other thing or things. If the majority of consumers reduce expenditure in the same channel, the demand for some commodity is curtailed, and if in consequence its price is slightly reduced, part of the tax is thrown on to the producers of this commodity in the shape of lower profits. Even if the price of some commodity were not actually reduced by an increase in the tax on tobacco, the producers of it would feel some effects as sales would slightly diminish.

Suppose next that a tax is placed on bread. Now the bakers would try to recover the tax by raising prices. But the demand for bread, though rigid, is not perfectly rigid, and at a higher price, less of it would be consumed, partly by exercising economy in the use of it, and partly by using more of untaxed foods and less bread. The bakers could dispose of the former quantity of bread only by raising prices by less than the amount of the tax, and thus paying a part of it themselves.

The bakers, however, finding it impossible to move the whole of the burden forwards, would attempt to shift it backwards to the millers by slightly reducing their demand

¹ Tobacco is a necessity in the sense of having a rigid demand. But the distinction, though traditional, is rather misleading as some necessities have an elastic demand. It is more accurate to think in terms of degrees of elasticity of demand.

for flour, and this backwards movement would continue through the wheat importers and shippers to the growers of colonial and foreign wheat, unless the profits at some intermediary stage were so high as to make further movement scarcely worth while. Another possibility is that no intermediary producer would succeed in passing backwards the whole of his share, with the result that by the time the movement reached the wheat-growers, the part of the tax thrown backwards by the consumers might have been dispersed.

Supposing, however, that more than a negligible amount remains, what will happen? If the corn-growers have no alternative uses for their produce and no alternative markets, they will pay a part of the tax by slightly reducing prices. If on the other hand, they have an alternative use for their corn or an alternative market, they cannot be made to share the burden, and the exporter will naturally try to pass the tax forward again; and it must finally rest on someone least able to restrict his demand.

Even if the wheat producers did pay a part of the tax they would only pay it permanently if it fell on some pure surplus that had no effect on conditions of supply. It is more probable, however, that supply would be gradually slightly reduced as wheat-growing would become less profitable relatively than before; hence the whole range of demand would bear a higher price, and the part shifted backwards might return practically in full to the consumer. Exactly what would happen in a particular case would depend on circumstances.

In any case a rise in the price of bread would affect the demands of the poorest classes for other things, and if the rise were at all serious a part of the tax would be paid by the producers of some of these things, and perhaps in peculiar ways. In some districts the effect on places of amusement would be the same as that caused by an increase in the amount of unemployment.

The more elastic the demand is for a commodity, the more pronounced will be the effects analysed above. The economic significance of the distinction between necessities and luxuries hinges entirely on the question of elasticity of demand. Few, if any, demands are perfectly rigid, as in the case of bread, unless the tax is very small or unless, what comes to the same thing, the taxed article is a small item in normal expenditure. Many demands, on the other hand, are highly elastic, and the more the demand is elastic, the less able are the producers to make the consumers pay higher prices. In the long run, however, if the tax remains with the producers, the supply of the commodity will tend to shrink, as the industry in question will become less profitable relatively to other trades. As the output diminishes, the greater relative scarcity of the product will tend to raise the demand price so that ultimately the burden will be shared in varying proportions between producers and consumers.

Where in the case of an elastic demand a heavy burden is thrown back on the producers, there may be a tendency for the weaker firms to be driven out of the supply and for production to be concentrated in the hands of a small number of highly efficient firms who may be able to recover the tax from the economies due to the larger scale of operations.

Where a taxed article is one of a series of alternative commodities, it is obvious that, through transfers of demand, the burden will be gradually diffused among several, if not all, the members of the series.

In considering the incidence of taxation, account must be taken of the conditions of supply¹ as well as of demand. If

¹ One point in connection with the restriction of the supply of a commodity owing to taxation cannot be emphasised too strongly, and that is, that the supply in any line of production will only be curtailed if productive factors are withdrawn from that line. This, however, will only take place if such factors can be more profitably employed elsewhere. Whether this will prove possible or not in any particular case will depend on the conditions of industry in general.

a tax curtails demand, supply will gradually be decreased, and the effects will differ according as the commodity taxed is being produced under conditions of increasing or diminishing returns. In the former case a smaller supply will be produced at a higher cost per unit, and price will tend to rise by more than the amount of the tax; in the latter case the contrary tendency will follow.

It follows from the above that it is not in the public interest to tax heavily articles that are being produced under increasing returns, and articles the demand for which is highly elastic.

The argument of this section can be expressed in diagrammatic form (Figure 8) which has the advantage of showing clearly that the incidence of a tax depends ultimately on the elasticities of supply and demand; for the buyer will tend to avoid the tax by restricting his demand, and the seller, by curtailing his supply. Where these forces are equal, the burden will be shared equally.

Consider the following case, the tax being collected from the sellers and the supply being produced under diminishing returns.

Suppose that a tax is collected from the sellers, and the supply curve raised to S^1S^1 , B^1C^1 will be the new selling price and OC^1 the new quantity sold.

The incidence of the tax will be divided between the buyers and sellers in the ratio of the elasticity of the supply to the elasticity of the demand, that is to say, in the ratio of B^1D to DE .

This can be proved as follows:—

$$\text{Elasticity of Supply} = \frac{BD}{AB} \div \frac{DE}{BC}; \text{ and}$$

$$\text{Elasticity of Demand} = \frac{BD}{AB} \div \frac{B^1D}{BC};$$

$$\begin{aligned}
 \therefore \frac{\text{Elasticity of Supply}}{\text{Elasticity of Demand}} &= \left(\frac{BD}{AB} \div \frac{DE}{BC} \right) \div \left(\frac{BD}{AB} \div \frac{B'D}{B'C} \right) \\
 &= \left(\frac{BD}{AB} \times \frac{BC}{DE} \right) \div \left(\frac{BD}{AB} \times \frac{BC}{B'D} \right) \\
 &= \frac{BD}{AB} \times \frac{BC}{DE} \times \frac{AB}{BD} \times \frac{B'D}{BC} = \frac{B'D}{DE}.
 \end{aligned}$$

The above result would remain unchanged if the tax were collected from the buyers instead of the sellers. In this case instead of a rise in the supply curve we should get a fall in the demand curve. The point to notice is that it does not affect the ultimate incidence whether the tax is collected from the buyers or the sellers. The case of increasing returns can be similarly illustrated by changing the slope of the supply curve.

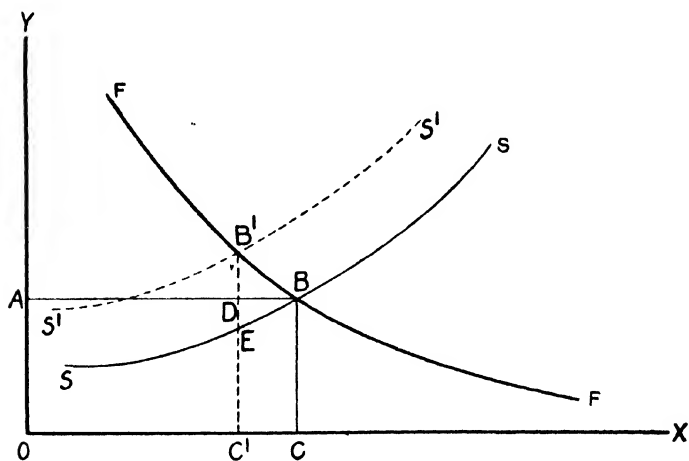


Fig. 8.

FF = demand curve.
SS = supply curve.

OC = amount sold in a given time.
BC = price per unit.

19. Incidence of Taxes on Rent and Land

It has been a commonplace of the textbooks since the days of Ricardo, that a tax on the economic rent of land must fall wholly on the landlord, the argument being that prices are determined at the margin of cultivation at which the land yields no rent, and that rent on the better lands is a pure surplus that exerts no influence on price.

But as we have seen elsewhere, the Ricardian view of rent and the margin is inaccurate and misleading. Rent can and does affect the supply of a specific product, and hence, indirectly, the price of the product; and once the price of a product can be even indirectly affected, indirect forward shifting is possible. A tax on economic rent, like a tax on land, would force the owner to put the land to the most efficient use from his point of view. A heavy percentage tax on economic rent would probably lead to some rearrangement of the uses of land with consequent reactions on the supplies, and indirectly the prices of specific products; a certain amount of diffusion would thus be possible.

The theory that the landlord could not shift the tax on to the farmer assumes that competition has forced the farmer to pay to the landlord all excess above the minimum rate of profit, in other words, that he is paying the maximum rent, and that to attempt to force him to pay more would drive him out of the industry. But the immediate effects of the increased rent, would lead the farmer to rearrange his uses of the land as in the case of the landlord, noted above. The relative scarcities of different agricultural products would change slightly and as the elasticity of demand is not likely to be equal in all cases, the resulting price disturbances would probably transfer part of the tax to some class of consumers. It is true that where the home country's output is a small fraction of the country's demand for products, any action of the farmers and landlords cannot have a marked influence on supply and prices, but if imports are restricted, they can.

The landlord is more likely to pay the major portion of a tax on rent in a free trade, than in a protected, country.

There is, however, another point to be considered. We have emphasised that the differential is not the fundamental aspect of rent, but it is undeniable that where land is of varying quality some land yields a greater surplus than others. Now on Mr. Hobson's theory that all taxes tend to settle on surplus income, it is at these points that the landlord's share would tend to settle.

Again, in practice, it is difficult to separate non-economic surplus from high returns necessary to keep land in a specific supply, and further, from rent due to capital invested in improvements. Any tax that tends to check the investment of capital in improvements tends to decrease the supply of products and to raise the demand prices of the consumers.

A tax on building-site values will vary according to the nature of the site, and the degree of relative scarcity. It is assumed by advocates of taxing the unearned increment that the incidence is wholly on the owner, and that he is exacting the maximum rent. Where this is the case the tax could not be passed on directly. On the other hand, it is difficult to say what the maximum rent really is, because scarce land in the centre of a city is subject to constantly new alternative competing demands; hence the demand for certain sites is constantly increasing in intensity, and the landlord would be able to move part of the burden indirectly, if not directly.

Dwelling-house sites have a much more elastic demand. Under normal conditions, rents acquire a certain fixity, partly because they are governed by custom to some extent, and partly because many people expect to pay a certain percentage of income in rent. A rise in rents tends to force more than one family under the same roof. Under normal conditions, therefore, a tax on site values cannot be shifted to the tenants by raising rents, and it would remain with the landlord.

For the same reason, a tax on houses would fall on the builders, but in the long run it would discourage building, and as the relative scarcity of houses increased in intensity, rents, so long as they remained competitive, would rise, subject to the limiting factor noticed above. The ultimate result would be that the builder would be able to move part of the tax on to the tenant in the shape of higher rents, and the tenant, in turn, would probably pass a portion of his share to the producers of things for which his demand would be curtailed by higher rents.

An increased demand for houses would be an increased demand for building sites, always relatively scarce. In many cases, therefore, a tax on site values would be shifted in part to the builders. The amount movable, however, would be limited on the one hand by the fact that rents cannot be raised beyond a certain point without curtailing the demand, and on the other by the fact that the profits of builders cannot fall relatively to those of other trades without curtailing the demand for land.

20. Incidence of Taxes on Profits

It is generally argued that a general tax on profits, like that on rent, cannot be shifted, because the tax would provide no economic motive for a re-arrangement of the resources of production; in other words, an entrepreneur could not evade the tax by changing the nature of his business.

Now if we regard the marginal firm in any industry as the no-profit business, or at any rate the normal-profit business, it is easy to superimpose the profitable firms in grades, and to conclude that all profits above the normal are non-economic surpluses.

But as we have already seen, this is not a true conception of the margin. It may be necessary in any specific industry for certain entrepreneurs to make a high rate of profit in order to retain them in the supply; hence, much of what

appears from one point of view as pure surplus is, in reality, necessary payments, and as these profits are remuneration for the bearing of uncertainty, a tax on profits would probably lead many entrepreneurs of this type to transfer their abilities and resources to less speculative, but safer enterprises, or even to open up entirely new fields in the expectation of reaping greater rewards.

It is true that they would not be able to shake off the tax directly, but the relative proportions of the supplies of different commodities would change, and as a result, relative prices would be modified, and part of the burden would be handed on to the general consumer in some form or other.

But there is another point for consideration. Ignoring, for the moment, the refinement between non-economic surpluses and necessary high payments to retain indispensable resources in a supply, the main source of accumulations of capital is profits, and indeed rent. Taxes on profits thus limit the resources available for industry, and tend to be passed on to the consumers in the shape of higher prices due to the greater relative scarcity of commodities. Again, causes that limit the accumulation of capital tend to raise the rate of interest and depress wages. In the long run a tax on profits may fall in some slight degree on the wage-earning population. Incidentally it may be noticed that a tax on interest would probably affect the accumulation of capital less adversely than a tax on profits.

Even with respect to the part of the tax that cannot be moved from the producers, where an article is produced in a series of independent stages the various intermediary producers will not occupy positions of identical strategic strength. There will be a tendency, therefore, for the burden to move from the relatively strong to the relatively weak. If some of the producers at the weak points are forced out of business, in the long run the relative scarcity of some intermediate process will have disturbing

reactions on prices, and various possibilities are opened, as we have already seen.

21. Incidence of Taxes on Incomes and Wages

Taxes on incomes cannot be shifted directly, though the opinions of business men and economists differ sharply on this matter. The general economic argument is that the elasticity of the supply of resources subject to a general income tax is so small as to be negligible; or, in other words, the tax will not cause any redistribution of productive resources because it will create no profitable opening that was not possible before.

But although it may be impossible to effect a direct shifting, even in the case of small incomes some of the burden tends to be diffused because the purchasing power of the taxpayer is reduced. In the case of large incomes these effects are more strongly marked, because the income-tax is a tax on profits, rent, and wages combined. As the tax strikes factors in all lines of production it tends to diminish the total supply of business enterprise, although it must be admitted that this is a highly controversial point.

The argument that a general income tax has no detrimental effect on enterprise and saving, rests on the hypothesis that most people have a standard of living that is fixed, and that any reduction of income will act as an incentive to harder work and greater enterprise.

But whether the income-tax discourages saving or not, it certainly affects the power to save, and by limiting the growth of capital it may produce unfavourable reactions on the general level of wages.

It may be objected that the income-tax, and for that matter, other taxation as well, is used by the state for objects that tend in the long run to increase the productive capacity of the nation. Here again we stand confronted by a controversial question on which opinions differ radically. Up to a point the objection may hold good, for it is clearly not to the economic interest of the nation that

its workers shall be underfed, badly housed, and illiterate. But within the scope of competitive enterprise which still rules the world, resources are not unlimited; hence it is possible for the State to divert to the social services at any one time, resources which could be employed to greater economic advantage by the business classes of the community.

Even when the fact is neglected that, beyond a certain point, State expenditure is not always accompanied by proportionate returns the fact remains that it is possible to divert too great a proportion of current income from immediate-consumption goods to objects which will yield fruit only in the distant future.

A tax on wages, where the labourers are on the margin of subsistence, must fall on the employers, for they would gain more in efficiency by raising wages to cover the tax than they would lose by not doing so. The employers would, of course, try to pass the burden on to the consumer, and in the long run, the tax would raise the prices of goods not consumed by the labouring population; otherwise a vicious circle would begin. In the case of workers earning wages or salaries above the subsistence level the tax could not be evaded through reduced physical efficiency. This applies with special force to classes of workers in receipt of salaries above the competitive level, and this is probably the reason why teachers' salaries, for example, are always a target in times of financial stringency.

Taxes on wages and salaries above the competitive level cannot be shifted directly, but in the long run the supply of labour may be discouraged, and should this occur to any marked extent increased salaries would shift part of the burden. But it does not follow that a tax on wages or salaries would seriously affect the supply in many occupations; in some cases the occupation offers attractions that are independent of remuneration, and in the case of teachers and Government and municipal servants, the secondary

schools and universities are sending out yearly a large number of young people who have no option but to compete for these employments.

22. Taxes on Monopolies

A tax on monopoly revenue is not shifted: it is supposed that the monopolist has already arranged his output so as to obtain the greatest possible net revenue. If this revenue is taxed, say at 10 per cent., it will be to his interest to retain production at the old level; if his revenue is greatest at a certain output, nine-tenths of his revenue will be greatest at that same output. Marginal demand has not altered, and thus the consumer will pay the same price as before, but ten per cent. of the monopoly profits must be paid as tax; the tax remains on the monopolist. The same thing will happen if the tax is a lump sum, irrespective of output or price; if the same tax is taken from a number of amounts, the amount which was the largest at first will remain the largest. A tax on output, however, will limit output; the production will fall to the point at which the loss due to lessening of net revenue is balanced by the saving of tax on the smaller output.

23. Incidence of Rates

Rates differ from taxes mainly in the fact that the area of their application is more limited. A tax cannot be evaded by moving from one part of the country to another, but it is possible to move from a highly rated to a lower rated area. Local conditions, too, vary a good deal from place to place; hence generalisations on the incidence of rates must be accepted with qualifications.

DWELLING HOUSES.—Rates on dwelling houses are levied on the tenant and it is generally supposed that the incidence remains with the occupier. They cannot fall on the builder, or owner, permanently, so runs the argument, because the

effect would be the same as a tax on houses, and would discourage building, and in the long run the scarcity of houses would force up rents and throw back the rates on the occupier again.

This theory, however, must be accepted with reservation. It is doubtless true in the case of new houses and in developing districts, but in the case of older houses in fully developed districts it is not true that an increase in rates cannot be passed on to the house owner. If the supply of a certain class of house is in excess of the demand,¹ the competition for tenants will throw the increased rates on the landlord. Houses like clothes change in fashion; districts, too, from various causes change from the point of view of residential desirability. It can, and does happen, that while there is a relative scarcity of modern houses in the desirable parts of a rateable area, there is a definite surplus of older houses in other parts. In any large urban rateable area, the incidence of rates would be wholly on the occupier in some districts, and particularly with respect to certain types of houses, but in other districts the incidence would be shared by the tenant and owner, and this is true with special force of all increases of rates after a house has fallen below a certain point of desirability.

The incidence of rates on shops and business premises is more complicated than in the case of houses. It is often argued that rates are treated as an expense of production and passed on to the consumer in the shape of higher prices, but this argument ignores the relation between relative scarcity and demand in fixing prices. To some extent, rates, like rent, determine the particular use that will be made of a site, and hence influence price through affecting the supply of products. On the other hand, as high rates

¹ Wherever and whenever houses are difficult to let, they are usually let at an inclusive rent, and subsequent increases of rates fall upon the landlord. Conditions changed for a few years immediately after the war, owing to the phenomenal scarcity of houses.

tend to force business premises to change their locality, it would appear that rates tend to fall upon profits. In the case of shops with a very large annual turnover due to special advantages of position, rates do not appear to have any marked effect on prices, but, as in the case of rent, they may determine that one type of goods, rather than another, shall be specialised in.

LAND.—Rates on agricultural land are supposed to fall on rent. High rates make for low rents, is an old-fashioned country proverb, and in certain circumstances this is true. If prices of products were steady, and farming profits were low, rates would fall on the landlord in the shape of lower rents. But this is not universally valid. If agricultural prices were rising, and profits were high, competition for farms would prevent the farmer from shifting the tax.

Increases in rates, after a period of stabilisation, at least in England, appear during the last twenty years to have been paid by the farmer, otherwise the De-Rating Act of 1929 would scarcely have been hailed as a measure of relief to the farming interest. Even in bad times, over a short period, rates like taxes tend in many cases to stick where they are imposed, and where they are gradually passed on to the landlord, the process is slow and adjustment probably takes place only when a farm changes hands.

24. Import Duties

As a general rule, import duties are paid by the country which levies them. This is often denied by the advocates of protection, but as we saw in the case of a tax on bread, foreign wheat-growers could only be compelled to pay part of the tax if they had no alternative markets, or no alternative uses for their wheat.

This, of course, is seldom or never the case, and though part of the tax may be paid by the foreigner for a short period, in the long run the amount of produce he will be

prepared to offer will be gradually restricted unless the demand price rises: in other words unless the importing country pays the tax.

What can be said of wheat applies to other commodities. If the taxing country is the main market for a commodity produced abroad under conditions of monopoly profit, it would probably pay the foreign producers to bear the major portion of the tax rather than curtail their scale of production; indeed such a case would apply irrespective of monopoly if the weight of the tax were less than the loss involved in sacrificing the advantages of increasing returns. The same reasoning would apply to the case of a monopoly dumping goods at a price below that ruling in the home market. If the duty were less than the benefit derived from producing in excess of the demand in the home market, the monopolist would probably pay the duty and continue to "dump."

Import duties of this kind are obviously not protective in character, and if they are to exert no influence in diminishing supply, their scope and amount is strictly limited. There are cases in theory, in which they could be imposed with advantage to the revenue, but they are few in number and seldom permanent in character. In practice, as experience teaches, it is impossible to maintain them at a low level, and unless they are protective they are of no benefit to the home producer. Once, however, the point is reached at which they curtail supplies, the duties are paid by the consumer in higher prices. As a means of raising revenue to supplement the direct taxes import duties are useful, but they are paid by the consumer.

25. Tariffs for Revenue

Tariffs, even for purposes of revenue, have usually been rejected by the thoroughgoing free-traders, but from a practical point of view of financing the administration of the country, they cannot be dismissed as wholly bad. It

is neither practicable nor, indeed, desirable that the whole of the financial burden of the country should be thrown on to the shoulders of a particular class; hence some measure of indirect taxation may be taken as necessary.

The argument against a protective tariff is not that it cannot be made to yield a revenue to the Exchequer, though it cannot be made to perform both functions with equal efficiency, but that as a general rule it is costly, and throws a more than proportionate burden on the poorer classes.

On the other hand, tariffs for the purpose of revenue only, and treated as subsidiary to direct taxation, are invaluable to every Government in times of financial stringency.

26. State Expenditure—Taxes *v.* Loans

The State's activities, whether public works or armaments, must be financed. (The normal expenses of government are included in the Budget, and paid out of the annual taxes.) The question before us, therefore, is how should the money be raised for a special project, a vast public works programme, or a rearmament scheme. The Victorian Chancellors of the Exchequer would have answered, by taxation. Taxation brings the burden directly to the notice of the public, and in that way tends to set limits to that burden, because the public is more likely to insist on a certain object being achieved in the most economical manner possible when it is paid for by taxation, than when it is financed by loans. Loans distribute the burden between the present and the future generations; their adverse effects are not immediately felt; on the contrary, they may create an artificial prosperity.

There are, however, several difficulties in the way of greatly increasing taxation. If the State expenditure is on a public works programme to offset a trade depression, an increase of taxation will probably cause the public to

restrict its expenditure, and so increase the volume of unemployment. Should that happen, the purpose of the government expenditure will have been defeated. High taxation also lowers the net returns from business undertakings so that extensions and new enterprises will be discouraged. Further, so far as taxation raises the prices of factors of production, the difficulties of the export trades will be increased.

Government borrowings avoid these difficulties in the immediate period, provided that they can be made without causing the rate of interest to rise, as in that case private expenditure on capital development will not be curtailed, and as new taxation has not been imposed ordinary expenditure will not be diminished.

If, however, there is a shortage of capital and the rate of interest rises, the borrowing method has slightly less advantage, but in any case, taxation must be increased in the near future to meet the interest charges on the loans, though this taxation will be much less than if the whole expenditure had been raised by taxation.

In practice, taxation is already at such a level that no vast new expenditure could be wholly financed by taxation. There is a limit to taxable capacity. Beyond that limit, diminishing returns would set in. Vast new expenditure must be met mainly by borrowing. Government borrowing, however, must be kept within limits as after a certain point it tends to impair the credit of the State. It is necessary, therefore, to employ both methods, and in such proportions that a minimum amount of damage is inflicted on the community.

27. Public Debts

The National Debt is the sum total of the State's indebtedness to its citizens at home, and to foreigners abroad. With its growth and development we are not concerned here, though incidentally it may be noted that its growth has

been mainly the result of foreign wars from the accession of William III. down to 1914, and by 1920 it had reached the astronomical figure of £7,829,000,000. ■

National debt is conveniently grouped under two categories, funded and unfunded debt. Funded debt is comprised of loans on which the State pays an annual interest, but does not undertake to repay the principal on any specified date. On the other hand, unfunded debt consists of short-period loans repayable on or before a fixed date. A large portion of the pre-war National Debt known as "consols" is an example of funded debt, while the war loans of the period 1915-1919 are examples of unfunded debt.

In addition to the categories noted above, the Government borrows large sums for very short periods varying from three months to one year by means of Treasury Bills. These very short period loans constitute what is known as the floating debt, but there is no fundamental difference between debts created by Treasury Bills and unfunded debt repayable at a specific date, apart from the question of the greater period of time.

Floating debt is often a burden of anxiety to a Chancellor of the Exchequer in times of financial stringency, as the repayment of large capital sums disturbs the money market, and if loans have to be raised for the purpose they can only be raised at a high rate of interest. The longer-period loans running from ten to thirty years may be repaid at moments favourable to the Government, or alternatively, "converted" at a lower rate of interest; but there is always the danger that repayment may fall due at a time very awkward for the State.

Funded debt relieves the Government from the obligation to repay huge capital sums at a specified date, but it has certain real disadvantages. The value of money is far from stable over long periods, and when prices are falling the State is paying out as interest, purchasing power of a higher

value than the corresponding sums received. On the other hand, a funded debt can sometimes be "converted" to a lower rate of interest when the openings for profitable employment of capital are few.

A second disadvantage to funded debt is that it probably encourages a Government to reckless borrowing as only the annual interest charge need be raised each year.

Possible methods of reducing National Debts are by means of (1) a Sinking Fund, that is a sum set apart in the Budget of each year for the purpose of the repayment of the principal of the debt; (2) terminable annuities; (3) the earmarking of certain specified taxes; (4) the capital levy, that is, a special tax on capital.

The chief method of reducing the annual burden of the National Debt, though not its capital amount, is by the conversion of the loan to a lower rate of interest. This can only be accomplished when the rate of interest on other safe securities is definitely below that paid on Government loans, and appears likely to remain so; in other words, conversion is only possible when from the point of view of the stockholder it is preferable to accept a lower rate of interest rather than have the capital repaid and be involved in the difficulty of finding a suitable investment elsewhere.

28. Distributive Changes in the Relative Shares of the National Dividend

In the last five chapters we have considered the problem of the distribution of the National Dividend among the different factors of production in the form of rent, interest, wages, and profits, assuming for the most part free competition. This at once raises the further problem of what effect changes in a dynamic society are likely to have on these relative shares.¹

¹ This matter has been discussed more than once in previous chapters. But its importance is such that even at the risk of some repetition, it seems advisable to return to it once again as a conclusion to the survey of distribution.

It is self-evident from what has been already said on the subject of taxation and tariffs in this chapter that the relative shares of the National Dividend can be changed by artificial means. The development of progressive direct taxation during the last forty years has undoubtedly redistributed the national income more favourably to labour than was formerly the case, although whether the imposition of tariffs on imports will have a counteracting effect remains to be seen.

But the relative shares of the different factors can be changed by purely natural causes, among the most important of which are the growth of population and capital, and technical progress. The effect of changes of this kind is very complex, and can be discussed here only briefly and with some reservation. The share of the National Dividend falling to any particular factor can be increased in two ways, either relatively, or absolutely; and these changes can be considered in the light of an increase or a decrease in the supply of the factor in question.

A decrease in the supply of any specific factor calls for little comment, for it is self-evident that such a condition is very favourable to an increase in its share in both an absolute and a relative sense. The actual result would vary with the elasticity of the demand for the factor, and also its elasticity of substitution.

Much more significant, however, is the case of an increase in the supply of a specific factor, for population, capital, and improvements are much more likely to increase than to diminish in supply.

An absolute increase in the share accruing to any factor when its supply is increased can only take place if the elasticity of the demand for that factor is greater than unity, for otherwise the rate or remuneration per unit of the factor would fall to a point at which the price per unit multiplied by the new number of units would not more than equal, and would probably be less than, the original share.

Whether an increase in the supply of any factor would effect an increase in its relative share would depend on its elasticity of substitution being greater than unity, because as the elasticity of substitution measures the ease with which one changing factor can be substituted for another, the greater the degree of elasticity of substitution the more readily will new units of the increasing factor displace working units of the others, and this substitution would prevent a fall in its price per unit.

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CHAPTER XVII

MONEY

1. Money Standard Apparently Invariable

In the preceding chapters the notion of money price has been continually considered as if it contained no inherent difficulties. To most men it is as easy to measure price in terms of the coins in common use as it is to measure distance in (say) feet, weight in pounds, or time in minutes. Every one knows that somewhere there is a piece of metal whose weight is a pound; every man has a rough conception of what a pound means to him. Whatever else varies, the ordinary man keeps unchanged his ideas of the common weights and measures.

In just such a way does the ordinary Englishman consider the shilling to be an invariable standard; in that way he formerly regarded the sovereign, but the disappearance of the familiar gold coin has given him some cause for wonder; none the less, he has merely lost a familiar landmark and obtained an unfamiliar one in its place. There have been strange price movements, but the shilling remains the link with the past; just as a balance will record different amounts of commodities at different times so the ordinary man finds, with more irritation than surprise, that his shilling obtains different amounts of commodities at different times. He would not understand the possibility of a change in his standard, any more than he would believe that the government standard of weight is continually varying; in the same way the occupant of a railway carriage appears to be at rest, while the landscape flashes past him.

In normal times, for most purposes, it is sufficient to assume that money is as invariable a standard as is the second or the foot; just as the relative movements of different objects on board ship take place as if the ship were at rest. To the steersman, the motion of the ship itself is always of interest, as it is to all the passengers under certain conditions; so the financier is always interested in money, in itself, and occasions arise when the subject of money is so far in prominence that all men are affected by the vagaries of the money standard.

The function of money can be understood only after a thorough comprehension of the processes of barter. The child knows that it can carry out its ordinary movements in a railway carriage, but only a mathematician can explain why this is possible. Money developed out of the need for a simplification of the processes of barter; money is so much a part of civilisation that it needs a real effort to understand its relations to economic life; our view of money is one-sided, for it has become our only standard of value of commodities in general.

2. Inconvenience of Barter

Barter is a most inconvenient method of exchange. If a savage has too much fruit and wishes to obtain hunting implements, he can drive a good bargain if he finds a man who has too many implements and desires fruit; this "double coincidence" is, however, very unlikely of attainment. Sometimes a system of complicated barter is effective; a man may give his surplus fruit for another commodity for which he has no personal use but which he can exchange for what he desires. There may be commodities like cattle which every man is ready to receive as payment, for they can be readily exchanged when desired.

The other great disadvantage of barter is that the units of exchange may be of an inconvenient size. Double coincidence may exist between two bargainers and yet

an exchange not take place; thus one man may desire a horse and the other a sheep and both be willing to trade; one man may demand more than two sheep for a horse, but the other will not give three, and thus there is no exchange; if a sheep had been divisible, a payment of two and a half sheep for a horse might have been satisfactory to both.

This is the great disadvantage of cattle as a measure of value; it can act as an intermediary in exchange only in those cases where the value of the wares is very large compared with that of cattle. The difficulty might be surmounted by making up differences in value by means of less valuable articles but with the development of trade arose the necessity for an intermediary of smaller value.

There is no doubt that cattle have been extensively used as a medium of exchange and also as a standard of value. Thus men kept cattle because, among other uses, they could be exchanged for commodities; they served as a medium by which superabundant goods of one kind could be exchanged for an article in constant demand, which in its turn could exchange for the goods desired. Also, the values of goods could be compared if the value of each was known in terms of cattle. Cattle might obtain a slightly higher value through their usefulness in exchange, but remained a commodity, differing in no essential from other commodities which were not used as media of exchange.

The use of salt tablets, of ivory, and similar articles provided a more convenient standard; these units being of smaller value, the value of commodities could be estimated more exactly. The use of cowry shells marks a further advance in this direction, and these have a further advantage in that they are presumably of equal value; cattle vary in value among themselves, and their usefulness changes from time to time. Such shells may be taken as the type of a natural primitive money.

3. A Simple Form of Money

We may suppose that the collection of shells involves some trouble; if the shells used as media of exchange are present in abundance, men will satisfy their wants by collecting shells and exchanging them for food instead of producing it themselves, unless there is some obstacle to such a procedure; in practice, it will probably happen that the shells are comparatively rare, or else that such quantities are required for a small purchase that most men will prefer to satisfy their wants by direct production rather than by the collection of the medium of exchange. Thus the shells will obtain a value due to their use as a medium of exchange; they will probably be desired as ornaments; in any case, the comparative difficulty of collection will make them desirable, and their possession will give the same kind of pleasure as will the ownership of other goods. Thus these shells will be ordinary desirable commodities, like ornaments or implements.

It is plain that if shells are very abundant, they can possess little value; if many are still unappropriated, no one will give many desirable goods for a few shells which he can quickly collect himself; even if they are all appropriated, the average person will have so many that the same result will follow; to use modern terms, the marginal utility of shells is low. If shells were suddenly to come into being as standards of value, they would be collected up to that point at which the marginal hour's work spent in collecting would give the same product (indirectly) as the last hour spent in direct production (this of course assumes frictionless conditions not realisable in a primitive community).

Thus the more abundant are the shells, the lower is their value and the larger the number required to be exchanged against any particular commodity. It should be noted most carefully that there is no difference between the determination of the value of the shells and of any

other commodity: if sheep multiply while horses are carried off, the number of sheep given directly in exchange for a horse will rise; if a new stock of shells is discovered, more shells must be given in exchange for other goods. Thus it follows that if other things do not change, an increase in the number of shells will diminish the value of shells and raise the value of other things in terms of shells.

In a community where shells are used as a medium of exchange they will probably have an alternative use as ornament. Civilised peoples prefer ornaments of gold and silver; the precious metals everywhere possess a high value for this purpose alone. Very valuable articles cannot easily be bought and sold in terms of shells, for a colossal number would be required; thus a developing community must use a medium of exchange more desirable in itself, *e.g.* one of the precious metals. Metallic money is a natural development out of previous standards.

4. Gold Money a True Commodity

It may now be realised that our modern money is a true commodity, differing in no respect, say, from furniture or precious stones. Most men believe that money is in some way different from other things: it is not different, for the properties which are dominant as regards money are latent in all commodities. The value of gold is governed in the same way as that of corn or cotton; in the long run it tends to equal its cost of production. If the world's stock of gold were suddenly lost, the product of the mines would attain a greatly advanced value, just as the price of coal would soar if the stocks already hewn were suddenly destroyed. Men would offer a larger quantity of desirable goods for an ounce of gold, that is, a smaller quantity of gold would purchase the same quantity of goods.

Gold appears to occupy a special position because the price of commodities is stated in terms of money, and the converse is rarely true; occasionally an article may be

sold at the rate, say, of five for a shilling, but the buyer instinctively thinks of the goods as about $2\frac{1}{2}$ d. each. It is very difficult to imagine that a certain amount of money has a definite value in terms of goods; it is easy to grasp the idea of the price of a pound of fruit; it is difficult to grasp that of the number of pounds obtainable for a shilling (especially if the number is not exact), unless the price per pound has first been taken as a basis.

5. Uses of Good Money

Silver and gold are metals which have obtained universal favour as a result of their suitability for all the purposes for which money is used. The uses of money as a medium of exchange, as a standard of value, and as a common denominator have been considered. In addition, a good money should make it possible to "store" value, *i.e.* to provide a sum of money which can be put aside till needed, and then be used to purchase any desired commodity; a perishable commodity might possess great value, and for some purposes might be used as a medium of exchange or a standard of value, but it could not be used as a permanent store of value.

Again, a good money can be used as a "standard of deferred payments." "Money is a form in which capital is held *in suspense* without loss . . . Money is never 'second-hand'; it will always fetch itself, and it loses nothing by keeping. . . . Cattle are good enough for present bargains, but not for the forward- and backward-looking calculations of profit and loss" (Bagehot). If a man owes £100, the lender should feel that the money he receives when he is repaid will compensate him for the money he originally paid. In times of rapid price movements, even gold and silver prove unsatisfactory measures of deferred payments; when prices are rising, the lender receives less value than he gave; and vice versa. Corn might be a useful measure of deferred payments over long

periods, but in short periods the seasonal variations would make it a bad measure: if a man lent a quantity of corn in spring, he would not be compensated by the repayment of an equal amount after the harvest, when corn falls in value as a result of abundance.

6. Attributes of a Good Money

In order that a money shall perform all the functions enumerated above, it must possess various attributes. The first condition is that of *general acceptability*. Cowry shells could not serve as money in a progressive country, because no one would accept them in payment for valuable goods; we have seen that acceptability requires an alternative use of the money material. The next condition is that of *divisibility* without loss: cattle and other animals lose much of their value when divided, and this loss may be even more marked in the case of precious stones; some stones lose most of their value when cut. With this may be coupled the need of *cognoscibility* and *homogeneity*: by the former is meant the easy recognition of the quantity and quality of the material in question; by the latter is meant the similarity of each portion of the material in bulk. Thus a graded sample of corn would fulfil these three conditions; the quantity could be easily found by weighing or measuring, and the quality is given by the grade; any proportion of the whole could be obtained by the same process, and the sum of the separate parts would be as valuable as the whole, while every portion would be of the same value as every other portion having the same weight. Ornaments and other works of art would have none of these advantages: in their case, the whole is more valuable than the sum of the separate parts.

An essential condition is that of *transportability* without depreciation. Delicate or perishable articles might be used as a temporary standard in a limited area, but a money in use throughout a country must be capable of being easily

carried from place to place. *Portability* is another requisite: coal cannot be a good international money because, among other reasons, it is too bulky, *i.e.* a comparatively small value of coal is heavy and takes up much space; the value of such a commodity will vary greatly from place to place, because transport costs are large in proportion to the original cost. A good money also is easily transferred from hand to hand; if articles are immovable or awkward to handle they cannot be extensively used as a medium of exchange.

The next condition of a good money is that of *storability* without loss of any kind. A herd of cattle will increase in value if "stored" and allowed to multiply, but it needs constant attention. Most goods depreciate by keeping; those commodities which are quite unaltered by being stored make the best standards of payment. The ideal money would be imperishable and unchangeable.

Lastly, there is the important condition that a perfect money should possess *fixity of value*: this condition must be carefully distinguished from the last. An imperishable article might change in value if the quantity available increased, though its value would not rise unless alternative uses for it were developed, or part of it were stored away. Even if its amount were constant, its value in terms of other commodities would change as the supply of other things changed; this change in relative value should, however, be distinguished from that due to the change in supply of the available money.

7. Advantages of Precious Metals

The precious metals fulfil all these conditions except the last, at least as compared with most other commodities; there may be substances which fulfil certain conditions better than these metals, but they do not fulfil all the conditions as well as gold and silver.

Gold is generally acceptable for its own sake; it is practically untarnishable and does not rust, while it can be

worked with ease; it is put to many uses in the arts, and would be put to many more if it were less scarce. Silver is less desirable, for it tarnishes more easily, but its beauty renders it generally acceptable, though its comparative abundance lowers its exchange value; it is, however, not so abundant as most of the commodities whose value it measures.

Silver and gold are each divisible without loss; the value of a ton of metal is hardly different from that of twenty separate hundredweights, for small pieces of metal can be easily melted; wood or cloth is not so easily divisible, for small pieces will be left over which are almost useless. The quality and quantity of precious metals may be estimated without difficulty; metals may easily be weighed, and assaying is not a very troublesome process. It is the easier in that metals are markedly homogeneous; if it is known that a lump of metal is the same throughout, it is sufficient to test a small portion.

Metals are transferable in the sense that they are easily moved from place to place, and are not awkward to handle. Gold and silver are also portable; a great value can be packed in a small space, and thus can be transported cheaply, the main cost being that of insurance. These metals can be stored indefinitely without loss; their resistance to rust gives them an advantage over most metals; humanly speaking, they are practically imperishable. Further, when they are worked up into ornaments or coins, they regain their original condition on melting; when alloyed with a baser metal their isolation is not difficult. Physically speaking, a store of silver or gold is the same after long keeping, though its value, economically speaking, may alter.

8. Stability of Value

The value of gold and silver is not immutable, but this disadvantage holds good for every other single commodity. Many attempts have been made to obtain a substance whose

value is so stable that all other values may be obtained in terms of it, but there has been no success so far. In addition to the large seasonal variations in the value of corn, there are smaller variations from age to age; corn may be a standard of the greatest assistance in regard to some economic problems, but it cannot be a permanent standard, though the secular variations in its value are often less than those of gold or silver. Human labour is another standard which, estimated in the appropriate manner, is less variable than gold or silver, but its practical usefulness is not great in this connexion; even if all commodities were made by manual labour, the differences in efficiency between different men would make the standard difficult to apply, and as things are, the use of the standard is not feasible.

The value of gold is far more stable than that of perishable articles; it is true that its annual production varies greatly, and that on some occasions new goldfields are opened out which are the cause of a large addition to the stock of gold in use in the world. Yet the wear and tear of gold is so small that immense stocks of metal are in permanent use; the annual production also is so small compared with the total stock that a single year's production hardly affects the value of gold. The marginal utility of gold does alter continuously, but the effect is marked only when the lapse of years makes plain the cumulative effect of the small annual changes. The same remarks apply also to the case of silver.

The precious metals do not fulfil the requisite conditions perfectly. The cost of transport of gold is small compared with its high value, but it is not negligible; it is very portable, but its use as currency entails a little inconvenience. A well-to-do man finds it inconvenient to carry much money on his person, and the hoard of a man who (in medieval times) saved money for emergencies might attain inconvenient dimensions.

A new type of money has developed which is more portable even than gold.

In early times it was essential that the medium of exchange should be a commodity in common use, for the sale of an article was at first a species of barter; if cattle were the medium, men who possessed large stocks of other commodities would desire cattle for their own sake; the arithmetical sense is weakly developed in primitive communities, and the "seller" of goods would desire cattle because he received something tangible in exchange for his goods. Money is a growth, usually a slow growth, and a kind of collective confidence is needed for its development; a seller demands either tangible commodities or else some form of money which experience has shown that he can utilise without trouble or delay.

Thus a great difference between primitive and modern trade is that the savage can exchange goods only through a material medium, while the civilised man exchanges goods on a basis of accounting; two men would experience little difficulty in exchanging a bicycle (say) for a piece of furniture; if exchange took place at all, they would agree on a money valuation of the bicycle and the furniture, and the excess would be paid in actual money. This process would be impossible among primitive people: the medium of exchange would have to pass from hand to hand during each separate transaction, except in those cases where two articles are directly bartered. In modern terms, *A* would have to give the bicycle to *B*, receiving money for it, and part or all of this would be returned to *B* in exchange for the furniture. This clumsy process is avoided by calculations of which the normal primitive mind seems to be incapable.

Gold is acceptable because it has alternative uses, but this fact is usually forgotten during a transaction; the normal trader accepts gold because it possesses powers of purchase. A great advance was made when men learned

to transact business without the visible mediation of gold; gold may thus become a "money of account" in such a way that exchanges are made on a money basis without the actual use of gold. Thus if *A* and *B* agree that the money value of the bicycle is the same as that of the furniture, an exchange may be made without the actual use of money, though it has been adopted as the basis of calculation.

Gold is thus becoming more and more the basis of calculation rather than the material medium of exchange. One example is seen in the case of convertible bank notes, which are in effect a receipt for gold. These are far more portable even than gold, and when issued by a trustworthy bank give the same feeling of security as does gold itself, for they are usually exchangeable for gold. If a community has unshaken confidence in notes, their greater portability will lead to the displacement of gold in the pockets of men who habitually carry much money.

9. Clearing Houses

The last step in the evolution of a convenient money is the complete disuse of any material medium of exchange, though gold or other substance is still the money of account. The possibilities of such a money are foreshadowed in the clearing-house system as applied to banks and railways, and also in the system of bills of exchange to be later described. A simple example will illustrate the clearing-house system. The transaction between *A* and *B* mentioned above will show that money may often be dispensed with in simple, direct transactions. Now suppose that three men, *A*, *B*, and *C*, live in the same place; *A* owes *B* a large sum of money, *B* owes *C* the same sum, and *C* owes *A* the same. It is obvious that if these men agree to cancel the debts, matters will be settled satisfactorily without the use of money. If the debts are of different amounts, a simple arithmetical calculation will

show that the debts may be settled by the payment of a small balance, and the amount of money which actually passes will be small compared with the total debts. In a railway clearing-house the credit and debit of each railway with respect to other railways is estimated; instead of each railway paying out large sums and receiving other large sums, it merely pays or receives a comparatively small balance. Transactions are carried out by a process of book-keeping; actual money is used only on relatively few occasions. In business as a whole, the bulk of the payments are made on this principle, and actual money is used as small change. Cheques in banks are largely used in place of metallic money; the cheque system, considered later, will be seen to effect a clearing of debts with the minimum amount of such money.

By these means the disadvantages of a gold money have been largely removed, but the main disadvantage still remains: as long as the book-keeping processes of debt clearing are based on gold as a money of account, the changes in the value of gold in relation to other commodities prevent gold from becoming a fixed standard. Gold is a more stable standard than most things; it is far less stable than it should be.

10. Paper Money

So far we have considered money mainly from the standpoint of the precious metals, but as has already been noted, gold rarely circulates in these days: its place has been taken by paper money. Paper money takes two main forms: either notes issued directly by the Government, or notes issued by the Central Bank. In England, with which we are mainly concerned, the notes are now issued by the Bank of England, subject to some control and supervision by the Treasury.

Notes further fall into several sub-classes. They may be freely convertible into gold and silver on demand, as in the

case of the pre-war Bank of England note, or they may be inconvertible, that is, they may bear no claim to a fixed quantity of gold. Notes that are freely convertible have a value equivalent to gold; on the other hand, inconvertible notes have a value dependent mainly on public confidence in the issuing body.

This confidence depends on several things, but mainly on the belief of their continued acceptability. The notes carry no right to gold, but they may yet be issued against a certain quantity of gold, or securities, or a combination of the two. On the other hand they may represent nothing but a Government fiat; hence their acceptability depends simply and solely on public confidence in the solvency of the Government, and the extent to which they are issued, that is, on the supply relative to the demand.

All paper money has the disadvantage that it will only circulate freely within a limited area; even convertible paper may not be readily accepted abroad, and, outside the issuing country, inconvertible paper will only find a market with those who make speculative purchases of foreign currencies in the hope of deriving a profit from a rise in their value.

The great merit of paper money is that it effects an economy in the use of gold. Adam Smith regarded the use of gold as currency as unproductive capital, and argued that a country which could substitute some other currency for gold would be so much the richer. This was confirmed by the experience of the recent war, when, by substituting Treasury notes for gold in the internal circulation, millions of pounds were released for Government purchases of supplies from abroad.

It is clear, however, that an economy of this nature can be effected once only, and that the moment the notes are issued in excess of the metallic currency displaced, various possibilities are opened up. It does not necessarily follow that an issue of notes beyond this amount will prove

harmful; indeed, if the state of trade were such that the amount of money were relatively scarce, the issue of extra notes would prove beneficial. Trouble arises, of course, when an exact line cannot be rigidly drawn.

This raises the question that has been so much discussed since the war. Can inconvertible notes be so regulated that all the advantages of a metallic currency may be preserved, without its certain disadvantages? Theoretically, no doubt, the answer is yes. If all future Governments were perfectly enlightened, and ever remembered the lessons of the period 1915-1925, the currency could be scientifically managed by a regulation of the issues. But Governments are usually subject to pressure from various quarters, and as Professor Cannan has pointed out, there is always the danger that they will yield to the temptation to over issue, especially in abnormal circumstances.

11. Substitutes for Money

Coined money and notes do not exhaust the term purchasing power. Money has various substitutes of which account must be taken in every consideration. The most important are the cheque (including the bank draft) and the bill of exchange. A cheque is merely an order on a bank to transfer to a third party, a part of some customer's account, or to pay over to the customer a determined amount of notes or cash, if he makes the cheque payable to himself. As in this country payment by cheque is the rule, rather than the exception, the economy of gold effected by this device is enormous.

The positive advantages of the cheque over the note or coin are very definite. Apart from the greater convenience when the sums in question are large, risks of theft, fraud, and loss are rendered negligible by various devices now adopted.

Although a bill of exchange is in one sense a cheque, it differs from it in several matters. A cheque is payable on demand, and if a bill of exchange is so drawn that it is also payable on demand, it becomes a cheque. As a rule, however, a bill is payable only at some future date. Legally, a cheque can only be drawn on a bank; but a bill of exchange can be drawn on a bank, or on an accepting house, or on an individual. The fundamental difference, however, between a cheque and a bill is that the latter involves an element of time.

The economic significance of a bill of exchange is easy to grasp. If a London merchant buys goods from abroad, an interval of time, more or less long, must elapse before the goods reach England and are marketed. For obvious reasons the English importer does not desire to pay for the goods until they have reached him and are either sold or in process of sale. He may be certain that they will sell, but he may be without the necessary funds with which to pay in advance, and in any case he will have alternative uses for his capital during the interval.

Similarly, the exporter may have urgent needs for ready cash; he may have various pressing claims to meet, and indeed, without the aid of some device to smooth away difficulties on both sides, purchase and sale, if not impossible, would be greatly restricted.

The bill of exchange is therefore a mutual convenience. The foreign exporter draws a bill on the English importer payable on an agreed date after it has been accepted in England. This bill, the exporter passes to his banker, who in turn sends it to his London agent, who presents it for acceptance, that is, his written promise to pay when the bill matures. After the acceptance, the bill becomes a negotiable instrument, which can be sold to a bill broker or banker at its face value less a discount determined by the current rate of interest, the length of time before the bill matures, and the credit of the acceptor. A bill accepted

by a London bank or accepting house will command a higher price than one drawn on a private individual.

Some of the advantages of a bill of exchange were noticed above. It allows commercial dealings, involving an interval of time, to take place with a facility that would be impossible if cash had always to be paid before goods were moved, and if the bill is drawn against goods in universal demand, it is a safe and legitimate transaction. By the time it reaches maturity the goods will have been marketed and the debt cancelled.

The bill of exchange is not only more convenient, but it is cheaper than any other form of credit. In certain circumstances an overdraft is perhaps more advantageous than a trade bill but it is a more expensive form of finance, and is not always available to the individual trader.

All bills, however, are not genuine trade transactions: they are not always drawn against goods in transit. Many of them are finance bills, based on the credit of some person of standing, or on securities, and fundamentally, they are a convenient form of raising loans. Treasury Bills, which fall within this class, are promissory notes payable by the Government on the expiration of two or three months, and may have some influence on prices, but we shall examine this question later.¹

The fact that money admits substitutes, and that these substitutes can and do function as a medium of exchange with equal efficiency is a source of confusion. A bill of exchange and a cheque are purchasing power as much as a gold sovereign or a £1 note, but strictly speaking, they are not money. The difference is that they have a limited circulation only, and in consequence, they function more narrowly than standard money.

¹ For further information concerning the technicalities of bills see Weston: *Banking and Currency*, and Withers: *Meaning of Money*. Withers gives a great deal of valuable information on these technicalities.

12. The Value of Money (The Quantity Theory)

The traditional theory of the value of money is known as the Quantity Theory, an explanation of the value of money which dates back to John Locke at the end of the seventeenth century.

Let us suppose for convenience that the standard money is an ounce of gold of given fineness. Now if gold coins are freely convertible into bullion, and bullion into gold coins, it is self-evident that these two values must be identical. If that were not so, and gold had a higher value in the arts than as money, coins would be melted down and used for some alternative purpose in the arts; and conversely, if gold had a higher value as money than in the arts, less gold would be used in the arts, and more as money.

This truism, however, requires a supplement. The next step is to link up the purchasing power of money with the supply of these money ounces.

Suppose for simplicity that all payments are made by money ounces, that no hoarding takes place, and that credit is excluded. Then the quantity of money in existence appears to be one factor determining the purchasing power of money; the amount of exchanges which take place in a given period appears to be another; and the third appears to be the rapidity of the circulation of the coins, that is, the average number of times a coin changes hands in making purchases.

In actual practice it is necessary to extend the term money in existence to include the substitute for gold, *i.e.* notes, and the substitutes for money, *i.e.* cheques, bills of exchange, etc.; and with this inclusion we get the following theorem: that the purchasing power of the money unit in use equals the quantity of exchanging to be done in a given period, divided by the number of money units in use, multiplied by their average velocity of circulation.

The Quantity Theory can be stated in various ways, the most concise of which is the Fisher equation $MV = PT$, where M = the total quantity of money in existence; V , the velocity of circulation of money; P , the average level of prices; and T , the volume of transactions effected in a given period.

That the Quantity Theory contains important truths is beyond dispute, and with some qualification or other it is accepted by most economists, but in many cases the qualifications are so important as to leave only the bare bones of the theory remaining. Its truth is usually defended as follows:—

If the quantity of money in a country increases, people having more money to spend will demand more goods. Now clearly if the demand for goods increases, and supply remains constant, the general level of prices will rise. On the other hand, if the quantity of money is decreased, the demand for goods is curtailed and prices will fall; or in other words the value of money will rise.

It is not difficult to cull from modern history instances which appear to confirm the theory. Each discovery of a great gold-producing district, from the discovery of Mexico and Peru in the sixteenth century to the goldfields of Klondyke at the end of the nineteenth century, has been followed by a rise in prices, but the effect has naturally been most marked in the gold-producing countries themselves. In these places the rise in prices may correspond very closely to changes in the supply of gold, but when we consider the world as a whole, the evidence is less conclusive; and some economists reject the Quantity Theory entirely.¹

¹ The experience of the War years furnished evidence in a contrary direction. In Germany particularly there were periods when prices changed out of all proportion to changes in the supply of currency. Some striking examples, not only in Germany but in other countries as well, are cited in Garis: *Principles of Money and Credit*.

13. Criticisms of the Quantity Theory

In the first place it is objected that the theory lacks precision because it assumes a balancing of two loose totals, the quantity of money in existence, and the total commodities offered in exchange. It stresses the rapidity of the circulation of money, but ignores the fact that goods themselves may change hands more than once.

Now the total quantity of money in existence is a little indeterminate. The moment that credit instruments are included in money in a broad sense, and they cannot be excluded to-day if the theory is to have any real significance, we meet with the difficulty that this form of purchasing power can be expanded or contracted at will, and it is money in this sense with which transactions are effected on the exchanges for raw materials.¹ It is true that credit money is usually based upon gold, but there is no definite proportion between the total volume of gold in existence, and the amount in use as the basis for credit; neither do the banks in the world as a whole base their supplies of credit to gold on any uniform ratio.

Even with respect to gold alone, the major effect on prices is confined to the gold-producing districts. So far as the world as a whole is concerned, the stock of gold in existence is so large that even a marked increase in the supply forms only a small percentage of the total.

On the other hand the quantity of exchanging to be done is equally indeterminate, and this applies with special force to inconvertible paper where the quantity of exchanging to be done and the rapidity of the circulation of the notes are influenced by the credit of the Government.

If we apply the above conclusions to the Fisher equation it is clear that a change in M will not necessarily cause a

¹ This point may present difficulty as the question of credit money has not yet been examined. It will be necessary to refer to this matter again after reading the next chapter.

corresponding change in P because as M changes, T and V are likely to change.

Another objection that is sometimes urged is that the demand for goods is only a demand at a price, and therefore that the Quantity Theory seeks to explain prices by assuming the very price relations that require to be explained.¹

A further criticism that may be noticed is that the Quantity Theory only accounts for absolute changes in price levels; but when absolute changes in the price level occur in either direction, relative prices change likewise. The Quantity Theory explains rises and falls in general prices as a result of increases or decreases in the supply of purchasing power, but it does not explain why these prices do not rise or fall uniformly.

Mises admits that the Quantity Theory contained one fundamental truth—namely, that there is an undoubted connection between variations in the value of money on the one hand, and changes in the demand for, and in the supply of, money, on the other. But, he continues, the theory fails to explain the mechanism of variations in the value of money. On this point, Mises is in agreement with Davenport and Wicksteed. The real defect in the Quantity Theory is that it began at the wrong end, that is to say, it focused attention on the community; on the total volume of transactions and the average velocity of circulation. But the correct approach to a theory of value must come from the other end, through the individual.

It will be shown in the section following that the demand for money is not a demand from the community as an entity, but an aggregate of individual demands. Mises proves very clearly that changes in the supply of money cannot lead to proportional changes in price. We can, of course, speak of a general price level, but it is an abstract

¹ See Davenport: *Economics of Enterprise*.

conception, and many economists regard it as of doubtful value. In the concrete the so-called general price level is an average of a series of individual prices. Now individual prices can change in numberless ways without disturbing the average. Again, the average can rise or fall a certain distance as a result of very different combinations of changes in the series of prices. The Quantity Theory, which is related solely to the abstract general price level, is thus too general and comprehensive to meet our requirements.

As Wieser and Mises emphasise so strongly, the existing price structure is never changed simultaneously in all its parts. In the first instance price changes affect individual prices only, and the effect of changes at any particular point is diffused gradually and slowly. But, as has been pointed out above, the Quantity Theory sheds no light on this matter.

The Quantity Theory owed its popularity largely to the fact that money was formerly placed in one of those special categories with which the older economic theory abounded. Money was supposed to differ fundamentally from commodities, or labour, owing to the fact that within wide limits the function of money in a community can be performed equally well by a large or small amount.

Now this certainly does not apply to commodities considered from the standpoint of their user, but it does if considered from the standpoint of the dealer. His income or profits are independent of the value of the commodities in relation to their use. So long as his profits remain unchanged it is a matter of small importance to him whether his turnover is large or small. From his point of view the function of his wares, like those of money, can be performed equally well independently of their amount. This assumed peculiarity of money, therefore, is not a fundamental difference between money and commodities,

but is rather a difference between the points of view of users and dealers.

Another supposed special peculiarity of money is that currency is a legal institution, and that it owes its value to a decree of the Government. This argument is not without force, but its importance is easily exaggerated, and recent experience shows that once a currency is in excess of the demand, no Government fiat can prevent it from depreciating in value.

14. Value of Money (The Marginal Theory)

It should not be inferred from the criticisms sketched above that the Quantity Theory has no validity, but it must be accepted with caution, particularly its assumption, real or apparent, that the elasticity of demand for currency is always unity, that is, that doubling the quantity of money would just double the prices of commodities, and reduce the purchasing power of money by one-half, however many times this operation was repeated.

But the main objection to the Quantity Theory is that the fundamental truths of the value of money have no need of a special theory, and that the marginal analysis applies to the value of money in the same way as to commodities.

To return to gold, for example, it is evident that as the supply increases relative to the demand, gold will fall in value because it will be put to lower uses than formerly. This is true if the supply of gold increases in a relative sense only, that is, the supply remaining constant while the demand for it falls off owing to changes in the habits of its consumers. And what applies to gold as bullion applies equally to gold as currency, because although we are accustomed to express the value of commodities in terms of gold, the converse is equally true. From the point of view of the shopkeeper, a hat buys a sovereign or a £1 note, just as from the point of view of the customer a sovereign or £1 note buys a hat.

If the supply of gold coins is increased relative to the demand, the coins fall in value like other goods. In the case of the individual, it is clear that as his supply of money is increased, after a certain point, its marginal value falls, and that it will be put to less urgent uses than it would be if the supply were a little smaller. The same reasoning applies to the lenders, the banks, etc., when their supplies of money increase relative to the demand for loans during a trade depression. Loans are obtained on cheaper terms because from the standpoint of the lenders, the marginal value of money has decreased with the relative increase in the supply. This is equally true from the point of view of the borrowers, because as the money is obtained on cheaper terms the loans are put to lower uses in the sense that enterprises are undertaken that would not have been possible in more normal times.

In the case of the community as a whole, the ground differs somewhat. When we speak of money in relation to individuals or even a class, we are really talking of the marginal value of incomes. But the currency of a community as a whole is not income, and an increase in its supply, unless the output of commodities were expanded in the same ratio, would not give the community as a whole command over more goods so that less urgent wants could be satisfied. On the other hand, if the amount of the currency doubled while the supply of goods remained constant, the marginal value of the currency would diminish in the sense that the deduction of an increment would entail less real loss than if the supply had remained unchanged.

Where a currency, then, is units of gold that can be freely converted into bullion, and where bullion can be freely converted into money, and where there is no restriction on export or import, the value of money conforms to the value of the metal, which is determined

like the value of all other commodities, by demand relative to the supply.

The value of a gold currency is to-day an academic one, as gold coins are not likely to circulate in this country. This leads to the question of what determines the value of a note currency. Does the value of notes follow the same principles as gold coins, or must the above theory be modified when applied to notes?

Now if the notes are freely convertible into gold on demand, and if there are no restrictions on the uses to which the gold may be put, including export, it is evident that the notes must circulate at par with gold, for if the notes were over-issued to the extent that their purchasing power, measured in goods, were less than that of the gold which they are a promise to pay, holders of these notes would immediately convert them until the surplus number was withdrawn from circulation.

The value of a convertible note currency, therefore, like that of gold coins, depends upon the value of the bullion which it represents.

Even where the notes are actually inconvertible no new principle with respect to their value is necessarily introduced. If their supply is restricted to the same amount as would have been the case had the notes been freely convertible, their value can be maintained at par with gold bullion; for, with a strictly limited supply, the community would have no greater volume of purchasing power than if the currency consisted of gold coins.

In practice, however, there is always the danger that this strict limitation of issues will not be maintained. Once the natural check of convertibility on over-issue is removed, various forces tend to force the Government or the Central Bank to put an excess of notes into circulation, and the general level of prices will begin to rise, or what comes to the same thing, the real value of the notes will depreciate below their face value.

The peculiar danger attached to over-issue is that the rise in commodity prices is, up to a point, only gradual, and, as was the case in the war years, an air of apparent prosperity is introduced. With a price level constantly rising, industrialists and traders are enabled to snatch surplus profits, as they are constantly buying on one level and selling on a higher. The Government, too, gains in another way, as with a steadily depreciating currency it is constantly repaying loans with less value, measured in commodities, than the amount borrowed. Under such circumstances it is not always easy for a Government to resist the influences tending to over-issue, particularly as a rise in the general price level usually calls forth the argument that the change is the result of causes acting independently of paper money.

The argument amounts to this, that prices measured in terms of paper have not risen, but that they have fallen in terms of gold because gold has become relatively more scarce. This is conceivable, but it would be a purely accidental circumstance, particularly where a number of countries adopt an inconvertible currency as was the case during the war years. In every such case the diminished demand for gold over a large area would more than offset any falling off in the production of gold.

The value of an inconvertible currency, then, is determined by the supply relative to the demand. There is no theoretical reason why it should differ from a gold currency, but whereas the supply of gold is regulated by natural forces, the supply of inconvertible paper is at the mercy of the will of the Government.

The fact that inconvertible paper can have a value so long as it is accepted shows clearly that theories of money such as the bullionist theory which derives the value of money from the use value of the material of the currency is incomplete. So long as a circulating medium has general acceptability, it has exchange value whether the

material of which it is made has exchange value or not, and this exchange value is determined on exactly the same principles as that of metallic money. The main differences are that confidence in the general acceptability of paper money is easily shaken, and the area of its acceptability is much more limited than in the case of gold.

15. The Supply of Currency

The supply side of money is simple enough: the precious metals are mined, just as commodities are produced, because the demand for them is such that their production is a profitable business. All that we have said with respect to the supply of commodities applies to the production of gold. If the demand price for gold, *i.e.* its value measured in terms of other commodities, falls below a certain point, the supply will gradually shrink and the marginal firm will go out of the production.¹ Capital and labour will be tempted to other alternative channels as in the case of land and industrial businesses.

One secondary difference between gold and some commodities may be noticed, though this difference is common to all durable goods. In the case of cabbages, for instance, which are immediately consumed and disappear from the market, the supply is the annual output; but with respect to durable goods, gold, buildings, houses, railways, etc., the supply is the stock in existence. The value of money, it is true, is derivative, that is to say, no one desires money for its own sake, but, as Wicksteed shows, this is not a special peculiarity of money, but applies to all goods that are traded, that is, which are not held for purposes of consumption by the owner.

The supply side of inconvertible paper presents no difficulties. There is not even an expense of production

¹ Gold mining is a very speculative undertaking. The supply may shrink by closing of unproductive mines, but it may also shrink through enterprising entrepreneurs transferring their organising ability and capital elsewhere.

readily decreased; the supply of gold may be decreased by a drain abroad, or by hoarding, but a drain abroad can be reversed by several circumstances, and the amount of gold hoarded is not likely to exceed the annual output of the mines except in very abnormal periods.

When a paper currency is independent of gold, or even no longer wholly tied to gold, the case is very different. If the issue of a paper currency is solely in the hands of a Government, it can increase or decrease the number of notes in circulation as it pleases, for the cost of production of a note is negligible. In England, as will be shown in the chapter following, the note issue consists of a large supply of fiduciary notes, the maximum amount of which is fixed by law, plus notes which are really gold certificates. The supply of currency, however, is relatively elastic for two reasons. In the first place the Bank of England can increase its note issue by increasing its gold reserves; secondly, and more important, the Bank can apply to the Treasury for permission to increase its fiduciary issue for a limited period.

19. Mintage

English currency is an example of Monometallism or the single standard. This standard was gold; before the war, gold was also an important medium of exchange, but to-day it has practically disappeared from circulation. Coinage is said to be "free" when any man can bring bullion to the mint and have it coined; it is also "gratuitous" when the process is carried out free of cost. The manufacture of sovereigns (as of all metallic money) was and remains a State monopoly in this country; if State coinage had been limited in amount and not a monopoly, the scarcity of government money might have raised its value above the metallic content until brought down again by private coining. As it was, any temporary excess value of sovereigns over value of gold

content was quickly rectified by the fact that men would bring bullion to the mint to be coined, thus obtaining a higher value for it; in practice, the mere knowledge that this could be done prevented an undue rise of the value of a sovereign (measured in terms of gold), *i.e.* prevented a fall in the price of gold bullion. •

This would not apply to mints where coinage was free but not gratuitous; in such cases the value of a coin might rise above the value of metallic content by the amount of the Seigniorage, which is the charge for coinage, when such is made; where this amount is limited to the actual cost of coinage it is termed "mintage." Where mintage is charged, the value of the coin tends to oscillate between the value of the metallic content and the increased value due to addition of mintage. If demand for money increased, its value would increase as in the case of an ordinary commodity, but it could not permanently rise above the higher limit as long as coinage was free; it could not sink below the lower limit (in the absence of restrictive regulations), for then it would be profitable to melt down the coins, bullion being more valuable than coin; this process would raise the marginal utility of coins and lower that of bullion. Under such a form of coinage, the exact value of the coin would depend on demand for coins in relation to supply; a country becoming progressively richer would probably find that its coins were worth their bullion contents together with almost the full amount of mintage.

When the seigniorage is very high, the coinage (or note issue) is said to be "fiduciary" (the term "seigniorage" is in fact not usually applied to these cases). Thus a government note circulates at a value far above its cost, while before the war the sovereign circulated at almost its exact cost. Again, there was a large profit on the coinage of bronze and silver; there was no such profit on gold; a man who brought bullion to the mint in sufficient quantity

could have it coined at the rate of £3 17s. 10½d. per ounce of gold of standard fineness, or could at once obtain payment from the Bank of England at £3 17s. 9d. per ounce; in the former case he received, in due time, the exact equivalent of his bullion in a coined form: the State actually lost money on gold coinage, for it paid the cost of minting.

20. Depreciation of Metallic Currency

A metallic coinage is said to be depreciated when it is worth less as bullion than its face value, though the term depreciation is usually applied to inconvertible notes when these are so abundant that their actual value is below their face value. Where true depreciation occurs the inferior coins or notes tend to drive the superior money out of circulation. Gresham's Law obtained its name from the Elizabethan statesman, though he was not the first to note its application. It is to the effect that "bad money drives out good"; the "bad" money may have been worn and clipped coins, or new coins which contained a less value of bullion than the old. Again, if gold and silver are each legal tender to any amount, *i.e.* may be used in payment for any debt, the relatively cheaper metal will drive out the dearer; if the supply of gold increases, gold bullion will be less valuable, and gold coins will replace silver, for they will be over-valued.

The explanation of this is found in the fact that when a man has the choice of two metals in which to make a payment, he will pay in the less valuable medium; the better coins will be hoarded, melted (in spite of restrictive laws), or used for payment of foreign debts.

21. Token Money

Our fiduciary issue of silver and bronze coins is not depreciated in this sense, nor was it when the sovereign was in circulation. This cannot be wholly due to limitations

of legal tender, *i.e.* that a creditor need not accept more than forty shillings in silver or a shilling in copper, for it is plain that Gresham's Law will be effective whatever may be the law of legal tender. Our "token" coinage has been saved from depreciation by the limitation of its amount. There is a real and large demand for such an auxiliary coinage; silver and copper coins are acceptable throughout the country, though not outside it; hence it follows that the limited supply of shillings keeps up the marginal utility of a certain shape and size of stamped silver above its bullion value. Economic history, however, is full of examples of the depreciation of a token coinage through over-issue.

22. Bimetallism

Many states have tried to use gold and silver, not only as media of exchange, but also as standards of value; in England, silver is in no sense a standard of value. A system in which two metals are each legal tender to any amount, and in which the two metals are freely coined on the basis of a given ratio between their bullion values, is called Bimetallism; if there were more than two, the system would be called Symmetallism. Bimetallism has been widely advocated as a means of steadying general prices: if prices depend on the variations of two metals instead of one, it may be that the effect of an increase of supply of one metal is limited by the more normal supply of the other; prices alter through changes in the whole supply of money, and it will not always be the case that changes in the supply, say, of gold will coincide with changes in the supply of silver.

Bimetallism is not normally possible in a single country. Suppose that gold and silver are both freely coined and that the ratio between the values of the metals is legally fixed at 16 to 1. Now suppose large new discoveries of gold: gold coins may become over-valued, *i.e.* their value,

measured in silver may be greater than that of gold bullion. If the bullion market ratio falls to 15 to 1, it will pay to buy gold bullion and have it coined; thus 15 silver dollars (say) can be exchanged for a quantity of gold sufficient to make 16 gold dollars. When this is recognised, men will pay their debts in gold coin, which is over-valued; silver coins will be held back, and melted or exported. If the new gold supply is very large, silver may be completely displaced from circulation. Similarly, gold may be driven out if silver coin is over-valued.

If the whole world adopted Bimetallism, the relatively more valuable metal could not be thus exported; it would be melted and used in the arts until its marginal utility there was equal to the marginal utility of the corresponding coin, more valuable through its greater scarcity. Thus there would be changes in the relative numbers of gold and silver coins, but the legal ratio would be maintained; the same result might happen in a large group of countries. Thus France, Belgium, Italy and Switzerland formed the Latin Union, but the free coinage of silver had finally to be suspended, and silver coins became a token currency, though they were not recalled; thus bimetallism degenerated into the Limping Standard. Bimetallism is not a question of much practical importance to-day. Any advantage it offered in the way of economising gold has now been secured in other ways.

23. The Gold Standard

The gold standard has been referred to, indirectly, several times during the course of this chapter, and before closing this section of our subject, several matters require further explanation. Gold has been used as currency from time immemorial, but the gold standard itself is very modern, being a product of the nineteenth century.

A country is on a complete gold standard when its unit of account is a fixed weight of gold of declared fineness.

It is not necessary, of course, for gold coins actually to circulate, but the whole volume of purchasing power must ultimately be freely convertible into gold on demand, without any restrictions on the use that may be made of it. A country is not actually on the gold standard if gold cannot be exported or imported at will.

From 1816 to 1914, England was on a complete gold standard; circumstances then forced us to adopt an inconvertible paper currency, in practice at any rate. In 1925 we returned to the gold standard with a slight modification: our paper currency was brought again into relation with gold, but with bullion rather than specie. Gold could be freely obtained from the Bank of England, but only in bars containing approximately 400 ounces troy of fine gold.

From 1925 to the Gold Standard Amendment Act of September, 1931, England was therefore on the Gold Bullion Standard, but the difference between these two standards is purely secondary and rests on no fundamental principle.

ADVANTAGES OF THE GOLD STANDARD.—The advantages of the gold standard are very definite. It is an objective standard, that is to say, it is independent of the will of governments and cannot be secretly tampered with. Secondly, many people maintain that its purchasing power remains relatively stable over fairly long periods. On the other hand, many competent authorities dissent from this view, and point out that the demands of the industrial world for purchasing power, and the necessary supplies of gold, either in the form of currency or backing for credit, are two independent variables, and coincide, if at all, only by accident: it is on this ground that the claim for a "managed currency," so much to the front since 1920, ultimately rests.

The volume of purchasing power of any country on the gold standard rests on a relatively small amount of gold

which constitutes the Reserve of the Central Bank. But this Reserve is liable to be depleted by a drain of gold abroad for reasons that have nothing to do with industry and trade.

Speculation on foreign stock exchanges, and the withdrawal of balances by foreign governments, may start a drain of gold and cause credit to be curtailed at a moment when industry needs additional purchasing power.

But it is not contended, even by the enthusiastic "goldites," that the standard is a perfect one; only that in the existing circumstances it is the best possible one, and that the balance of advantage is in its favour. The extraordinary fluctuations in the price-levels of European countries using an inconvertible paper currency during the war years are not likely to occur when the purchasing power of a country is tied to a physical substance like gold.

The most important advantage of the gold standard, however, is in connexion with international trade. There is, of course, no such thing as an international gold standard in a formal sense, but as soon as a number of countries between which trading transactions take place have currencies related to gold, an international gold standard, in fact, comes into existence if in each of these countries gold is convertible into local currency and conversely, at fixed rates, and if free movement of gold is permitted between country and country.

If all gold-using countries had the same unit of account, the English sovereign, or the American dollar, no problem of monetary exchange would arise, but even with different units, under the conditions stated above, the value of each currency in terms of each of the others is fixed within definite limits. If, for example, a weight of 113 grains of fine gold can be coined into £1 sterling or 4.86 American dollars, and £1 sterling or 4.86 dollars can be converted into 113 grains of fine gold, the value of each unit of currency,

measured in terms of the other, cannot diverge by more than the cost of shipping gold across the Atlantic Ocean.

Only one exception to this rule holds, and that is the case of a financial panic: at such a time gold may not be able to be shipped rapidly enough and pressure may be put against export, but such a circumstance is of a temporary nature only.

The great advantage of an international gold standard is that it renders impossible those fluctuating rates of exchange which hamper international commerce. All foreign investments and mercantile transactions involve an element of time before payment of interest, or for goods is made, and so long as the currencies of the respective countries are tied to gold, the lender or exporter can calculate within narrow margins the value of the payment that he will receive. Under inconvertible paper currencies, rates of exchange can fluctuate very widely over short periods; hence business operations become highly speculative and remuneration uncertain, and in consequence the volume of international trade tends to be contracted much below its normal amount.

This is equally true of foreign investment; no factor tends to restrict the amount of foreign investment to a greater degree than fluctuating exchange rates, and international lending and international trade march together.

To this argument the opponents of the gold standard reply that stability of exchange rates can be achieved without the use of gold, and that the same result would follow if the most important countries would consent to link up their currencies to a particular one, for example, the paper £1 or the paper dollar.

DEFECTS OF THE GOLD STANDARD.—As has already been observed, the gold standard is not a perfect mechanism. In theory the standard was supposed to adjust the balance

of payments between two countries automatically. To simplify the matter let us suppose that England and America trade only with each other, and that a balance of payments is due from England to America. Gold will be therefore exported from England to America, but a loss of gold will reduce the supplies of means of payment in England in various ways so that prices will fall. On the other hand, the increase in the supply of gold in America will lead to an increase in the supply of means of payment which will cause a rise of prices. England will be therefore a good market to buy in, and a bad one in which to sell; exports will increase and imports will be restricted. Exactly the converse will apply to America, so that prices in both countries will tend to keep the balance of payments in equilibrium.

It follows, therefore, that for the gold standard to function efficiently, it must be worked according to certain rules; that is to say that there must be a high degree of freedom of trade between countries; the economic structure of the countries on the standard must be relatively fluid, so that prices and wages respond readily to changes in gold movements; also there must be no attempt by Governments and Central Banks to off-set the effects of gold movements—a country losing gold must allow its price level to fall, and a country gaining gold must allow its price level to rise. Since the war these conditions have not been fulfilled, with the result that the standard has failed to function efficiently.

The growing rigidity of the price system marks a great change from the nineteenth century, and is due to several causes. The enormous growth in the indebtedness of the Governments and Local Authorities has resulted in a mass of interest payments fixed by contract over a long period of years; the huge State expenditure in the form of payments to the social services cannot be easily reduced; the trade unions are now able to offer a much stronger resistance

to wage cuts than in pre-war years; the prices of raw materials and finished goods are becoming more and more fixed by partial monopolists, cartel agreements, and so on. The result is that prices no longer have the fluidity demanded by the gold standard.

Another weakness in the standard is that it is always liable to collapse in a crisis; it has often been urged against it that it is a fair-weather standard only. Other arguments brought against the gold standard are that gold movements may cause inconvenient changes in interest rates, and that deflation may be necessary in times of crisis to prevent a suspension of the standard. Deflation, which means, in effect, falling wages and prices, may prove a cause of serious trouble. Wage cuts are resisted by trade unions, and falling prices increase the burden of Governments and other people who have fixed payments to make. Further, as falling prices due to monetary changes reduce profits, new investment is curtailed and industry suffers.

GOLD BULLION STANDARD.—The gold standard can have more than one form, but the general principle remains the same in all cases. Down to 1914 gold standard countries used gold coins, but when the gold standard was resumed in the post-war years, England, for example, introduced the bullion standard. Under the bullion standard notes are used instead of coins, and the single note is not convertible. Notes are convertible into bar gold only, so that only relatively large quantities of notes can be freely exchanged for gold. The object of the bullion standard is to economise the use of gold.

GOLD EXCHANGE STANDARD.—The gold exchange standard is another device for economising the use of gold that was forced on certain countries in a weak financial position.

Briefly, when a country is on a gold exchange standard its Central Bank keeps as Reserves, not gold, but foreign

exchange, that is to say, claims to gold on gold-using countries. By this means the Central Bank can sell credits which can be converted into gold abroad; hence the value of the unit of account cannot diverge much from the value of its gold equivalent.

The most familiar example of a gold exchange standard country before the war was India. The currency there consisted mainly of silver rupees, and the gold value of the rupee was maintained at the rate of 15 rupees to the £1 in the following manner. The Secretary of State for India bought and sold rupees at certain fixed rates. He would sell bills of exchange on India at the maximum rate of $1/4\frac{1}{8}$ per rupee, and he would not sell below the minimum rate of $1/3\frac{2}{3}\frac{9}{2}$ per rupee.

An increased demand for rupees in London could not send up their price above $1/4\frac{1}{8}$, because the Secretary for India was prepared to sell an unlimited quantity at that rate. On the other hand an increased demand for sterling in India could not force the value of the rupee below $1/3\frac{2}{3}\frac{9}{2}$ for the reason given above.

Merchants in London who had payments to make in India bought rupees with gold, or credit instruments convertible into gold, which increased India's resources of sterling in London, and the Secretary of State paid out the corresponding rupees in India. Conversely, if merchants in India required sterling in London, they purchased it with rupees in India, and sterling was paid out in London. Whenever the balance of indebtedness was against India, and the demand for sterling increased, the Secretary of State sold as much sterling as was desired in exchange for rupees; but this in turn reduced the volume of money in India, and prices began to fall in exactly the way they would have done had India been on the full gold standard.

The advantage of any system which effects an economy in the use of anything relatively scarce is self-evident, and this applies with special force to periods when, for various

reasons, gold tends to be badly distributed between various countries. On the other hand the system is not without drawbacks.

In the first place, it is liable to be taken as a sign of financial weakness, a serious defect from a psychological point of view. Secondly, unless the exchange reserves are deposited at and controlled by an international bank with a fixed policy, there is nothing to prevent movements of these credits from place to place in accordance with fluctuations in the rate of interest in order to earn extra profit. In other words, exchange reserves may move from country to country for reasons that have nothing to do with the international exchange situation; hence the Reserve may fail to fulfil its true function.

There are certain other disadvantages, too, but these can be more conveniently examined in the following chapter, on Banking.

24. The Conditions for an International Currency

An international money is, of course, some form of the gold standard, and from what has been said already on this subject it is evident that before the world can return to a common monetary standard some provision must be made for the following conditions.

In the first place there must be a return to a reasonable degree of freedom of trade, and the existing restrictions on the foreign exchanges, etc., must be removed. Secondly, the "rules" of the standard must be observed both by Governments and Central Banks. Gold movements must be allowed to exert effect on prices, and must not be offset in any way. At the same time the principal Central Banks must agree on a common policy in order to keep the value of gold relatively stable. Thirdly, each individual country would require to take steps to render its price and income structure more flexible than is the case at present, for as

long as prices are not free to move in accord with changes in world conditions an international standard cannot be maintained.

25. Price Stabilisation

There are three main arguments in favour of a stationary price level. In the first place it is argued that justice is maintained between creditors and debtors; for if prices fall the real burden of a debt is increased, while on the other hand, if prices rise, the debtor pays back less real value than he has received. Incidentally, justice is also maintained between the receivers of fixed and variable incomes.

Secondly, it is argued that a stable price level would best serve the interests of industry as risks due to changing prices would be eliminated; speculation would also be discouraged.

The third argument is related to the question of saving; only when the price level remains stable can the voluntary saving made by the public be converted into an exactly equivalent amount of real capital goods. A falling price level wastes voluntary savings; a rising price level means, in effect, that the public is forced to save for the benefit of the producers.

There is, however, a case that can be made out against a stable price-level. Price changes can be caused by non-monetary factors. During a period of rapid technical progress when costs of production are falling, if prices are not allowed to fall in sympathy, disproportionate production is likely to result which, sooner or later, must lead to a trade crisis, and subsequent depression. Once a depression began, a stable price-level would probably make recovery more difficult.

The reasons for this need little explanation. With a stable price-level, the tendency to industrial over-expansion following on decreased expenses of production due to technical progress would receive no check in the form of

rising prices. On the other hand, during a period of decline a stable price-level would keep wages and other costs rigid, and by making profitable business increasingly difficult would probably intensify the trouble.

26. The Argument for a Rising Price-Level

A gradually rising price-level has the support of most industrialists on the ground that it imparts a necessary impetus to business. The entrepreneur, however, only benefits if the rise is unforeseen; otherwise the factors of production neutralise the effect by raising their prices. So far as this does not happen the producers make gains at the expense of the owners of factors of production and the general public; at the same time it can be argued that if the leaders of industry are prosperous, their prosperity is radiated in all directions.

There are, however, weighty objections against the rising price-level. In the first place if profits are allowed to increase unchecked there is always a serious danger of an over-expansion of the capital goods' industries; secondly, there is the moral objection that all producers benefit irrespective of their efficiency, social or industrial; and finally, it is doubtful if industry gains as much from a rising price-level as has often been supposed. The strongest case for the rising price-level is when the public is not making sufficient voluntary savings to provide industry with the real capital that it needs, as in that event a rising price-level will enforce saving by restricting consumption; but so long as the public saves the necessary capital voluntarily, forced saving is unnecessary.

27. The Problem of the Falling Price-Level

Whether a gradually falling price-level is an advantage to the community or not depends on the cause of the fall. If the cause is purely monetary, that is to say due to a shortage of purchasing power, the effects on industry are

unfortunate; the fixed income classes, too, gain unfairly at the expense of other classes. But prices can fall because technical progress has lowered costs of production, and when the falling price-level is due to falling costs, all sections of the community share in the fruits of technical progress. Falling prices due to falling costs need not inflict any damage on industrial enterprise.

Against this fact it may be urged that prices will only fall in proportion to costs, and in every case, when competition is perfect. But actual competition is very imperfect, and some prices are less flexible than others. A falling average price-level may not mean a uniform fall in particular prices, so that the relations between prices may change with serious results. Incidentally, this is true of all changes in the general level of prices whether downwards or upwards. It is not the height of the price-level that is really important; what matters is the fact that the relations between individual prices are seldom the same at one average level as another. The average level of prices is merely an abstraction derived from a large number of individual prices. When the general level rises or falls, some prices may change much, some prices may change only slightly. One or two may remain constant, or even move in the opposite direction. This difficulty of relative price changes is not altogether removed when the average is stabilised. It is possible for particular prices to vary without disturbing the average.

A difficulty in the way of maintaining a gently falling price-level by monetary management is that technical progress is not uniform over a period of time. The monetary authority would be unable, therefore, to forecast the rate of change in the future.

28. Neutral Money

In contrast with stable money which would offset any tendency to movement of the average level of prices by

variations in the supply of currency, neutral money would exert no influence on prices in either direction. Prices would tend to what they would be in a non-monetary economy when the necessary allowance has been made for the conveniences attached to the use of money. It follows, then, other non-monetary factors remaining equal, with a neutral money, prices would fall in exact proportion to the reductions in costs of production due to technical progress. Speaking broadly, neutral money would mean a constant supply of money, or more accurately, a supply of money that remained relatively constant when allowance for changes in the velocity of circulation, and in the number of the population had been made.

It is, of course, possible to exaggerate the differences between the stable, and neutral money schools of thought. In one sense the stable money school seeks to achieve monetary neutrality, but its concept of neutrality is not the same as that of its rival school, and for that reason different policies are advocated.

It is impossible to say which policy is the more satisfactory without qualification, for both bristle with difficulties. If the price-level is stabilised in a progressive society, then wages must be automatically raised as production costs fall in order to eliminate the dangers arising from surplus profits. In practice this would not be a simple matter. Employers would resist the demands of the trade unions. Secondly, cost reductions are not likely to be made at an equal rate in all industries at the same time, and unless wage rates can be manipulated in such a way that forward industries are encouraged to develop, and backward industries are compelled to progress, the resources of a country will not be used to the maximum advantage.

A policy of neutral money would also raise peculiar labour problems. If prices fell as costs were reduced real wages would rise, but it is doubtful if organised labour

would be content with constant money wages even when real wages were rising. If some powerful unions succeeded in forcing up money wages costs of production would be prevented from falling; indeed, it is probable that wages would have to be reduced in other industries.

29. Index Numbers

The ideal standard would be a definite quantity of a normal commodity; as this is unobtainable, a substitute known as an Index Number is growing in favour. If a very large number of commodities were selected, and their prices compared from time to time, a general average could be obtained, and so a general rise or fall of prices be recognised. The price movements of a single commodity could give little indication as to changes in the value of the gold standard, but if a number of representative commodities all show (say) a rise in price, it will probably be true that gold has fallen in value. The more commodities are selected, the more likely it is that the abnormally high price of one commodity will be balanced by the low price of another; if of ten commodities chosen from different groups of products, one has fallen in price (measured in gold), one has remained stationary, and the others have risen, it is fairly safe to conclude that the value of gold has fallen in relation to that of commodities in general, while that of one commodity has fallen even more than that of gold.

A successful choice of the right representative commodities combined in the right way may lead to the construction of an index number of prices which shall follow very closely the changes in the price of the normal commodity measured in gold. A certain year is usually taken as a base line, the index number being fixed at 100. If representative prices rise 10 per cent. in the next year, the new number will be 110; and so on. If the numbers are rising, general prices are rising, and the value of money

is falling. If, however, the money standard is based on the index number in such a way that £100 in metallic money is held to be of the same value at any future period as the number of pounds represented by the index number, the price of the normal commodity in this new standard would remain constant. Ordinary prices would vary, for values continually fluctuate apart from the changes in the value of gold, but a man who in the first year earned £100 and in the second year £110 (in the above case), would find the purchasing power of his wage unaltered; some articles would rise more than 10 per cent., but this rise would be counterbalanced by other articles which had risen less. The application of this to exceptional conditions is obvious and important. In a period of rapidly rising prices, the labourer should be paid in accordance with such a scheme; if the exchange value of his labour is constant, he will be treated unfairly if his (gold) money wages are kept constant, but justly if his wages rise in exact proportion to a reliable index number.

CONSTRUCTION OF AN INDEX NUMBER.—The construction of an index number is a matter of some difficulty. The selection of commodities must be made with care: if the bulk of the articles considered belonged to one group, *e.g.* textiles, foodstuffs, or manufactured goods, it would probably happen that their prices would tend to move in sympathy; thus for considerable periods, foodstuffs may gradually rise in price while manufactures fall. If the goods were not sufficiently variegated, the index number obtained might give a misleading impression of the course of general prices. Thus it is wise to make the goods considered as representative as possible: examples of each great class of commodities should be included.

There is, however, a practical objection to such a wide choice, *i.e.* that certain classes of goods are so variable in price that it is difficult to record price changes. Thus

wholesale prices are usually more easily obtained than retail: they are the result of keen competition, and tend to an equality from place to place; retail prices are notoriously inconstant, even in a single street. Thus wholesale prices are on the whole more useful for the construction of index numbers. The broad conclusions will doubtless be the same as if more commodities were included, but the actual numbers cannot pretend to perfect accuracy when the choice of selected commodities is limited.

Even when the serious difficulties of price determination are overcome, the method of construction of the index number needs serious consideration. If all commodities were measured in the same units and their prices did not differ enormously, a change in the simple average of prices would not differ greatly from the normal price change which is sought. As it is, units differ, ranging from the ton to the grain, and values differ yet more markedly. Thus, if a simple average were taken, great changes in a number of quite unimportant though very highly priced articles might exert an unjustifiable influence on the index number: if diamonds were one of a dozen articles in a combination, and if artificial production brought down their value to a nominal amount, the index number would show a sharp fall in general prices which would have no basis in fact. This difficulty may be partly overcome by taking as the unit one sovereign's worth of each commodity in the standard year, and recording the changes in the price of this amount.

WEIGHTING.—In any case, the device of weighting is very useful when accuracy is desired; even when commodities are measured in the same units and their prices are comparable, an index number based on a simple average may be misleading. Thus pomegranates might be taken as a representative commodity; the choice would be a bad one, but this fact will make the illustration clearer; if the

price of pomegranates suddenly and markedly rose, the index number would show a rise, unless the number of commodities selected was very large; in actual fact, the real change in general prices owing to this cause would be infinitesimal. This difficulty is avoided by obtaining a weighted average; each price is multiplied by a number representing the relative importance of the commodity in question. Suppose that a sovereign's worth of cotton and also of wool are taken as the base line of a rough index number in a particular year, the relative importance of wool being represented by 2 and cotton by 5. If in a succeeding year that quantity of wool is worth 23s. and the cotton 16s., the simple average is 19s. 6d.; the weighted average is found by adding five times 16s. to twice 23s., and dividing the sum by 7, obtained by adding 5 and 2; the weighted average is thus 18s. As cotton is more extensively used than wool, a fall in the price of cotton is more important than an equal rise in the price of wool.

30. The Defects in Index Numbers

Index numbers, however constructed, give approximate results only; indeed, in some cases the results may be very misleading. As a measure of the changes in the cost of living they may be very misleading, as the conclusions vary with the year chosen as the base. If, in the interval between the base and any particular year, the changes have been uniform and moderate, the index is a not unsatisfactory guide to the change in the cost of living of certain classes. If, on the other hand, violent changes have taken place, the individual will change the relative scale of his demands. The cost of living index therefore merely indicates the rise or fall that would have taken place in the cost of living if the average individual in certain classes had continued to purchase the same relative amounts of the same commodities as he purchased in the

base year. If the change has been violent in either direction this is not likely to be the case. All prices will not have risen or fallen to the same extent. A sharp rise in the price of certain commodities will cut down consumption a great deal. A sharp rise in others will cause drastic economies to be effected in other directions. The cost of living index, therefore, may be an abstraction rather than a reality.

The cost of living index is also misleading for other reasons. Any index number can only include groups of commodities, and these commodities are used, not by one, but by a number of classes. Different classes, however, use different commodities in very different proportions. A rise in the price of some commodities may affect certain classes to a considerable extent; at the same time, other classes may remain practically untouched.

A further difficulty is that unless the time interval compared is narrow, some commodities may have left and new ones may have entered the circle of consumption. Even the working classes consume many things to-day that were the luxuries of the well-to-do in 1914. Tastes and fashions change, and in some cases very quickly in these days. The above considerations should make clear the difficulties in the way of making an accurate comparison between the costs of living in different countries. Goods and items that have a high significance in one country may be relatively unimportant in another. In India, a rise in the price of rice would be an important matter; in England the effect would be negligible.

A more general defect, however, is that, as has already been pointed out in connexion with the Quantity Theory, the index measures an entity which is itself an abstraction. To conceive of a general level of prices in any other sense than as an average of particular prices is to start from the wrong end. And the moment we start from particular prices, it is clear that average changes are of much less significance than changes in particular prices. Price

changes do not begin with the average, but with particular prices, and it is the vagaries of particular prices that are the major cause of most of our economic ills. A change in relative prices may make certain forms of production unprofitable that were profitable before the change, and may thus form the first link of a chain leading to an industrial crisis.

An average can tell us little or nothing of the changes in its constituent parts; hence a percentage rise or fall in the general price-level affords little, if any, clue to the behaviour of the particular prices in which we are most interested. All that can be urged against the vagueness and generality of the Quantity Theory applies in a similar way to the concept of the general price-level and its measure of change—the index number.¹

31. The Fisher Plan

As an example of the way in which index numbers may be used to stabilise currency, the Fisher scheme, suggested by Professor Irving Fisher, may be noticed.

He proposed that a country's money should be token money only, but that the Government should be compelled to give gold for money, and money for gold, on demand. The rate of exchange between gold and money would vary with an index number in such a manner that money, measured in gold values, would fall in value as general prices rose, and rise in value as the general price-level fell.

In this way, when commodity prices were rising, people would buy gold, and the quantity of money in circulation would be reduced. On the other hand, when commodity prices were falling, people would sell gold to the Government for money, and the quantity of money in circulation would be increased. Thus by changing the

¹ For a more detailed discussion of Index Numbers, see Robertson: *Money*, and Benham: *Economics*.

quantity of money in circulation, a partial brake, at least, would be applied to changes in the price-level.

Fisher's plan has come in for a great deal of adverse criticism on lines similar to the objections that have been noticed against index numbers in general. Mises argues that the plan—and similar schemes—would not prevent those variations in relative prices which are the cause of so many economic troubles.¹

Further objections that have been raised are: that the scheme would work much too slowly; secondly, that it could not achieve its object, because when prices begin to rise or fall they do so at an accelerated rate; thirdly, that unless it were adopted universally it would cause great disturbance in the foreign exchange rates. Taussig agrees with the view sketched out on another page that it is impossible to keep the level of prices uniform by forces operating only from the money side of the equation.

On the supply side of gold, Professor Leffeldt has suggested an international control of the world's output of gold, but both of these schemes tend to overlook the fundamental point that the value of money is determined by the quantity of money in existence and the willingness of people to hold stocks of that money.

But money is a wider term now than gold. Even when a country is on a gold standard, a change in the total volume of bank credit, or a change in the willingness of people to hold stocks of money, will affect the general price-level in exactly the same way as a change in the volume of gold money.

Another scheme, which had the same object as Fisher's, was put forward by Keynes towards the end of the War. Briefly, Keynes opposed the return to gold and proposed to regulate the amount of paper currency in accordance with the needs of trade. The Mint would be under no obligation to accept all gold offered to it at a fixed price,

¹ Mises: *Theory of Money and Credit*.

so that the Bank would have the power to vary the price of gold. Keynes would use gold solely to correct fluctuations in the rates of foreign exchange. The volume of paper money would depend on the state of trade, the Bank Rate policy, and the Treasury Bill policy. There is much in common between the ideas of Keynes and Fisher. Both thinkers take the view that it is more important to keep the internal price-level stable than to attempt to maintain the foreign exchanges at a fixed parity.¹

Since the suspension of the Gold Standard Act in 1931 our currency has approached the plan of Keynes at certain points, though it is hardly a managed currency yet, in the sense in which that term is usually understood. But we shall discuss this point again in the course of the next chapter.

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Cannan: *An Economist's Protest*.

„ *Money*.

„ *Modern Currencies*.

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Keynes: *Theory of Money*.

Mises: *Theory of Money and Credit*.

Robertson: *Money*.

Todd: *Mechanism of Exchange*.

Withers: *Meaning of Money*.

¹ This is a very controversial point over which opinions differ sharply. The great advantage of a gold standard is that it keeps the foreign exchanges relatively stable.

CHAPTER XVIII

THE MONEY MARKET.—THE ENGLISH BANKING SYSTEM

1. Introduction

The monetary system of a country varies with the changes in its economic life: the use of a gold standard is impracticable in most primitive countries, while the use of copper as a medium of exchange in large transactions would be almost impossible to-day; the number of individual transactions is so huge that even gold is far too bulky for many monetary payments; it is not too much to say that modern economic development would have been impossible had not gold been largely displaced as a material medium of exchange.

The various substitutes for standard money have been already considered; it is now necessary to show in what way they are circulated. The use of substitutes has been made possible by the development of banking in all its forms. In mediæval times, a rich man would welcome the opportunity of placing his valuables in safe keeping, and might be willing to pay highly for the service; this would apply even if the valuables consisted of a hoard of metallic money.¹ In all times there are many men eager to borrow money for various purposes and very willing to pay for the loan of it; as industry developed, more would-be debtors appeared. Two classes of persons were able to lend money—those who owned money, and those who controlled it. Thus banks appeared; so much money was deposited with them that they controlled large sums.

¹ It was in this way that modern English banking began. The goldsmiths of London accepted valuables on deposit for safe-keeping during the Civil War.

2. Rise of Deposit Banking

Experience showed that the amount of money withdrawn from deposit in a given time bore only a small ratio to the whole deposits; thus it was normally quite safe to lend out a large proportion of these deposits, keeping back that amount which was sufficient to meet the demands for return of money lent. This became so profitable a proceeding that banks could afford to tempt depositors by offering interest on money lent, for they could recoup themselves by the higher interest they could demand from borrowers. Thus banks transferred the use of money from the possessing and saving classes to those who for any reason wished to consume wealth at once. To-day the most important class of borrowers is that of entrepreneurs, who need the temporary use of money for productive purposes.

Such banks made money because they were trusted by their customers; if all the customers demanded repayment at one time, as occasionally happened, a bank failure resulted; banks were successful if confidence in them was so great that such a "run" never took place. Men might demand repayment for various reasons, but they would not all require it together, if the credit of the bank was sound. Even in England to-day a run on a bank is not impossible: it may be that a bank is perfectly solvent, in the sense that for all the sums of money lent out there are corresponding securities of at least equal value, but if public confidence is shaken, men will clamour for immediate repayment; depositors then require metallic money or acceptable notes, and if the stock of such currency is insufficient to meet the demand, the bank must close its doors. When the credit of a bank is thus lost, its opportunities of "coining its credit" have gone, and it must give place to other banks. Here, as everywhere throughout modern economic life, it is seen that mutual confidence is a necessity for the smooth working of the economic organisation.

3. Banks of Issue

Banks came to realise very early that there were opportunities of further gain, with correspondingly greater dangers of failure. There have long been banks of issue and banks of deposit; it is possible that note issue was at first an almost accidental outgrowth out of deposit banking. Men received receipts for gold deposited, and the possession of such receipts came to be as desirable as that of actual money, for they could be exchanged for money at will. After a time banks came to issue these receipts deliberately, as bank notes, or perhaps the notes would lose the form of receipts though still convertible at will into metallic money. If, then, there was perfect trust in a bank, its convertible notes would be as valuable as money; the bank was eager to issue them, for they practically represented a manufacture of money. Again, the bank could, as a rule, safely issue these notes to an extent far beyond the amount of metallic money possessed; if all the issued notes had been brought back for repayment at one time, the bank would be ruined; in practice, however, this did not occur when a bank possessed public confidence. Bank notes are so convenient that they are preferable to gold when large sums are concerned; a depositor or borrower would be glad to receive such notes instead of money. Thus note issue became so profitable that banks grew up whose main source of income was found in the circulation of notes.

Naturally, failures have been frequent: as the prospect of gain is greater, so also is the risk of loss; if all notes issued by a bank had been returned for payment together, probably no bank could have stood the strain; the successful banks were those whose credit was so good that bank notes were as good as money; if men believed that a certain note issue was sound they would not trouble to present notes for repayment, and so notes could be safely issued in large amounts.

4. Book Credits or Bank Money

The manufacture of bank notes plays no part in present-day English banking, except in the case of the Bank of England. They have been displaced by book credits. When a business man is in want of capital, he can borrow it at a bank if he is trusted by a local manager. He requires the use of money, but is perfectly ready to accept a money substitute which is equally effective; he would prefer bank notes to specie; he prefers the use of a cheque book to either. A cheque is quickly written out and can be made for any amount, while it constitutes an automatic receipt of payment; when a cheque is charged to a man's account, he knows it has been placed to the account of the holder. Thus, when a man borrows money he may be merely given a cheque book, which he can use up to a given amount, paying interest for the privilege. The bank sells its credit merely, for it parts with neither specie nor notes; it manufactures money just as truly as it does when it prints notes; it takes further risks, for its liability to a dangerous "run" is increased, while its reserve of metal has not correspondingly increased. The prosperity of a bank thus becomes bound up with the solvency of the entrepreneurs who are its most important customers.

There is nothing mysterious about credit, though it can be explained from more than one point of view. Wieser regards the loan as the essence of credit. That is so, but it is better for many purposes to think of it as an exchange of goods against goods, not through the medium of money, but through the medium of claims to money. If two individuals were mutual customers, and wished to exchange equal values, the exchange could be effected without the use of money at all. Credit enters the operation because it is not usually practicable and convenient to complete the two sides of the transaction simultaneously. There is thus a time element in credit as there is in interest. Equal

values, however, are seldom exchanged; hence money is required for the adjustment of balances.

In an advanced society credit exchange is much more complicated. Usually A sells to B, but buys, not from B or even C, but from (say) D. For this reason, special machinery is necessary in order to effect a cancellation of claims to money, and that machinery is, of course, the banks. The banks make it possible for two aspects of the credit system to function—the exchanging of goods against goods through the medium of claims to money, and the granting of loans. In practice these two aspects are not entirely separate.

When a man borrows money from a bank his loan is called a “deposit,” and is treated in the same way as is the deposit of actual gold or silver brought by an investor. If a bank lends £10,000 to a manufacturer, the loan appears on both sides of the balance-sheet: it is an asset, because it is owed to the bank; that part which remains in the bank is treated as a deposit. Thus, if £3,000 is drawn out by cheque, the £10,000 (and interest) remains as an asset, for the whole sum is still owed, but £7,000 remains as a deposit. When men point to enormous bank deposits as a sign of national wealth, as after the war, it must be noted that such deposits are mainly fictitious, being book credits. By this means, an enormous structure of credit is built on a relatively slight foundation of metallic money. Banking deposits, then, have three sources: (a) cash actually paid over the counter; (b) the purchase of securities by the banks; (c) loans made by the banks to their customers.

Cash and claims paid in by customers and loans by the bank to customers are the main sources of deposits. The same term is used because no distinction is made between the types of transaction in the books of the banks. It seems unfortunate, however, that the same term should be used for transactions that are fundamentally different.

An increase in the total of bank deposits is no indication that we are saving more. On the contrary it may probably mean merely that we are spending more in some form or other, that is to say, that the banks are lending more freely.

Now it might be supposed at first glance that, if the banks are lending more freely, it is because the public is depositing an increased amount of cash or claims to cash over the banks' counters. That may be the case, but we shall see in the next sections that the power of the banks to lend is not restricted to the real deposits paid in by the customers. The banks can, and do, create additional purchasing power.

5. The Limits up to which a Bank may Lend

If we take the extreme hypothetical case of a completely self-contained country, and if we assume a single bank, and payments made only by cheque, then it is obvious that there is no limit on the bank money (deposits against which a cheque can be drawn) which can be created, for the total value of the cheques drawn against the bank must equal the total value of the cheques paid in.

Even if we replace the single bank by a banking system under the above assumptions, this holds good, so long as the member banks increase their deposits in the same proportion; otherwise the problem of inter-bank indebtedness would raise difficulties.

In practice, however, the above assumptions are not valid. Bank money is convertible into standard money, and part of every bank deposit is withdrawn in currency through the medium of cheques; hence every bank is compelled to keep a reserve of standard money sufficient to meet all claims for cash on demand.

These claims, too, are far from uniform; the demands for standard money vary from day to day and from season to season of the year.

The relation of bank money to reserves, then, determines the quantity of bank money. Normally, as the reserves expand, bank money tends to do likewise; and conversely.¹ In England the proportion between bank money and the reserves is not fixed by law, but is left to the discretion of the bankers, and this, in turn, is determined by experience.

The upper limit to the reserves is clearly the amount of accumulated real deposits, but this would only be necessary in times of serious panic, and in practice emergency measures would be introduced. The lower limit is the average demand for currency over a period of years. In practice, for obvious reasons, bankers keep well above this limit.

The exact position of the reserve between these limits will vary in different places, because the habits of the people vary. Where a people, from force of habit, makes the majority of its payments in cash, it is obvious that the reserve must be higher than where the majority of the payments are made by cheque. Reserves, therefore, apart from the conscious intentions of the bankers, are governed to some extent by the habits of the people.

6. Cautions with Respect to Bank Money

Two matters arising out of the preceding section need explanation. It is often supposed that, if a bank received a large cash deposit, it can lend many times this amount.

A simplified form of the argument is as follows:— Suppose that gold is used, and that there is a single bank in a self-contained country, and suppose further that the bank can safely lend $\frac{4}{5}$ of its deposits. It lends therefore $\frac{4}{5}$ of the original deposit, and this loan is redeposited, and so on. It thus appears that the bank can make loans to the value of many times the original deposit.

¹ Assuming that demand is not impeded in any way.

The argument, however, needs qualification. The successive loans would tend to raise prices and drive gold into the arts, so that less than the amount first loaned would be available for redeposit; and further because of higher prices, more money must be kept in hand; therefore the amount that could be redeposited after each successive loan would be less than the amount of the loan.

The effects would vary with the intervals of time between the loans and the deposits; they would not necessarily be uniform at any point, but that does not affect the general position. The introduction of credit, and of several banks for one complicates the matter, but does not make any fundamental difference.

It is sometimes supposed that the banks, in lending, create something from nothing, because their loans are made in a form which appears as deposits. When a man borrows a large amount from a bank he does not withdraw the loan in cash; the bank simply places that amount to his credit in its ledgers; in other words, the bank gives the borrower the right to draw cheques against it up to a certain sum. So far as the books of the bank are concerned, there is no difference between a savings deposit made by a customer, and a deposit arising from a loan made to a customer. A borrower could withdraw the loan in cash and then immediately re-deposit it across the counter. An increase of bank deposits, therefore, does not necessarily reflect an increase in the real savings of the community; indeed, it is more likely to indicate an increase of indebtedness on the part of the public to the banks. It follows, therefore, that a rise in the rate of interest will not necessarily increase total deposits. Savings deposits will increase, but loan deposits will tend to decrease as bank money becomes dearer.

It is, of course, a matter of experience that bankers do lend, at any one time, sums greatly in excess of their existing resources at the moment. They are, however, not

creating something from nothing, but lending their own credit, and this procedure operates in much the same way, but with greater force, as in the case of the private individual in whom his creditors have ample confidence.

What really happens is this. When Smith borrows from a bank, the bank receives his promise to pay a given sum at the end of a given period and gives him in turn its own promise to pay a smaller sum on demand.¹ There has thus been an exchange of credit between Smith and the bank.

The vital fact in the transaction is this. Smith's credit, however good as an individual, will not circulate as a medium of exchange, but the bank's credit is convertible into standard money. We can say with truth that the bank has thus created purchasing power that did not exist before, as it has supplied Smith with a means of meeting the claims upon him without reducing the volume of money in the hands of any individual, but this has been possible only by converting the bank's credit into cash.

But the bank can only travel a certain distance along this road with safety. It can and does create deposits or bank money, but it cannot safely increase these created deposits at a rate relatively greater than that of other banks, and the ratio between its created deposits and the total of created deposits by the whole banking system must be proportionate to the part of the country's banking system performed by it. When we turn from the individual bank to the banking system of the country as a whole, it is clear that the rate at which the deposits are created must be related to the total strength of its reserve forces, if the financial system is to remain sound.

But it must not be inferred from the above that the right relation between loans and reserves is always kept with mathematical precision. Concrete circumstances are much too complicated to permit that. Another difficulty in the

¹ This is what it really amounts to, because Smith would have to pay interest on the loan.

problem of bank loans is this. A business man, borrowing from a bank for productive purposes, does so in order to obtain command of real capital. The ultimate essence of a bank loan, therefore, is a transfer of real capital. But the real capital is not in the possession of the bank. Clearly, then, there must be some relation between the amount of bank loans and the amount of real loanable capital available if the economic system is to work without friction. Bank loans must be related therefore to the state of the reserves and to the amount of real capital on the market.

It should be self-evident that there is a close connexion between these relations. If the banks are lending in excess of the amount of real capital on the market, sooner or later, competition between borrowers for portions of this scarce supply of capital will cause prices to rise. This in turn will cause borrowers to require additional loans from the banks, and the ratio between loans and reserves will be reduced.

It will be necessary to refer to this matter again when we reach the question of the Bank Rate and the price level.

A question that is often raised is, do the banks create credit? By this question is meant, does the initiative in a credit creation come from the side of the banks, or from the customers? In other words, is credit created by the banks tempting their customers to borrow by lowering the rate of interest, or are the banks forced to create credit because of the pressure exerted by their customers? The bankers deny the first view, but there is much that can be said on both sides.

7. Usefulness of Banks

Banks perform an invaluable function in industrial life. In earning large profits, bankers are rewarded for their social utility. Gold is not only more cumbersome than paper, but much more expensive; if gold were as convenient as paper, it would yet be unwise to coin the immense

amount of bullion required by modern trade conditions; a metallic medium of exchange would mean the transference of wealth from productive purposes to a use which could equally well be given by a cheaper material. Thus wealth that otherwise would be put to a wasteful use is set free for industry; further, the very serious wear and tear of the precious metals is lessened by the use of substitutes. Notes and book credits allow the money medium to expand in amount at a low cost.

A banking system also makes money more mobile; in a pure metal economy it might happen that some men hoarded gold for which they had no immediate need, while traders in another place found their productive energies crippled by lack of such money. Banks could do something to bring together the lender who will accept a small interest if his hoard is safely stored away and the borrower who will pay a high interest for the use of money which will bring large profits; their usefulness would be limited by the trouble and expense of transporting precious metals. The modern system of cheques, however, has made the problem of money transference one of little difficulty. English banks have been so far perfected that the small savings of men with neither knowledge of business nor interest in it are directed by banking authorities into the most productive channels. In addition to that, bankers advise their customers with regard to their investments, and act as trustees and executors.

Banks also perform a useful function in that they stimulate saving; interest is not the only incentive to accumulation of capital, but much less capital would be available for industry in the absence of organised institutions providing facilities for thrift. The increased production which follows the extended use of capital means more saving; and so on. The existence of banks is thus a main factor in the great increase of wealth of our time. The convenience of banks is a further advantage, apart

from questions of economy. The substitution of the note for the coin and the cheque for the note has done away with the old cumbrous methods of settling large accounts.

The connection between the English banks and industry has always been less close and more indirect than was the case with the pre-war Continental banks. On the Continent, the banks provided both fixed and working capital. As a general rule, and for reasons that will be considered in another section, English banks have limited their services to industry to the provision of working capital, mainly by means of the overdraft, and the bulk of the working capital used in our industries comes from this source.

8. The Cheque System

The cheque system owes its efficacy to the existence of clearing banks: without them, a cheque would merely be a more convenient bank note. A man may receive a cheque drawn on any bank; he takes it to his own bank and it is placed to his credit; though banks are independently managed, such transactions are carried on as if they were under one control. It follows that huge sums of money may be transferred without the actual passage of any money at all. Consider a particular provincial bank: cheques are brought to it drawn, perhaps, on every bank in England, and cheques have been drawn on it by its customers and probably lodged with other banks. If banks were not in connexion, a man might be able to get a cheque cashed at once, but then his bank would have to obtain the money from the bank on which the cheque was drawn, and this latter bank would obtain it from the man who drew the cheque. This cumbrous procedure would be intolerable as a means of settling the great number of present-day transactions.

At certain times all the banks connected with a given clearing house send up the cheques they have received.

Each bank will demand payment for the cheques on other banks which it has received, but will be liable for those cheques drawn on it and received by other banks. The clearing banks calculate the net credit or liability of each bank and does the whole of the colossal amount of work represented by the cheques. Each bank will simply pay the clearing bank its net liability or receive its net credit. Thus payments which represent millions of pounds are settled by book-keeping methods, without the intervention of actual money. If a particular bank has received £10,000 worth of cheques on other banks, while £9,990 in cheques has been drawn on it and is held by other banks, it will be owed £10 by the clearing bank.

The clearing banks operate through the Clearing House, which was explained in the previous chapter. The system of cancellation of claims is simple enough, but there are one or two matters in connexion with the Clearing House System that merit attention.

In the nature of things it is highly improbable that each member bank will be in a neutral position each time a settlement is effected, that is to say, that its claims upon the other banks will exactly balance the claims of the other banks upon it. Each member bank must therefore keep a reserve (a credit at the Bank of England), from which an adverse balance at the Clearing House can be paid.

This fact alone shows clearly that no single bank can safely expand its loans without regard to the policy of the other banks. Suppose, for the moment, that bank A suddenly decided to expand its loans and that for some reason or other banks B, C, D, etc., refused to do so. The new loans would cause a great increase in the value of the cheques drawn on bank A passing into the possession of the other banks. Now as this would not be compensated for by an increase in the value of the cheques passing into bank A, the latter would quickly have an adverse balance with respect to most banks at the Clearing House. If the

expansion of loans were great and continued for any length of time, the reserve of bank A would be exhausted and it would become insolvent.

Next let us suppose that bank A expanded its loans while banks B, C, D, etc., governed their loans by the state of their reserves. As before, the first effect of A's action would lead to a transfer of part of its reserve to the other banks. But these banks, finding that their reserves were on the increase, would lend more freely, and more cheques drawn against them would pass to bank A. This would tend to counteract the drain on the reserves of A. It is, therefore, not difficult to see that, if all the banks decided to increase their loans in exactly the same proportion, they could do so in safety, at least so far as the Clearing House is concerned.

They could not do this indefinitely, however, because a break in the public confidence would mean a much greater demand for cash; hence a limit is set on expansion by the amount of the ultimate reserve—that of the Bank of England; and that reserve has to provide for foreign as well as home payments.

9. Bank Money as Loans to Industry

In addition to the functions of the banking system that have already been noted, banks make loans for productive enterprises; indeed modern business depends to such an extent on bank credits that if these facilities were withdrawn it is doubtful how far manufacture could be carried on at all. Most productive undertakings, whether industrial or agricultural, involve an element of time, during which payments for raw materials, rent, and wages have to be made. The entrepreneur therefore applies to the bank for a loan and receives the right to draw cheques up to the amount specified. When the product is marketed, the loan is repaid.

To appreciate what has really happened behind this phenomenon it is convenient to return to the hypothesis of the self-contained district and the single bank. For the sake of simplicity let us further assume that there is but one shop, that this sells everything, and that the shopkeeper is also the sole ground landlord. And to simplify the argument still further, let us suppose that no one saves during the period.

Clearly, all payments by our entrepreneur ultimately find their way into the banking account of the shopkeeper; thus by the time the product is ready for the market the whole of the bank loan has been transferred from the account of the entrepreneur to that of our shopkeeper; and as on our assumptions he is the sole dealer, he also buys the product from the entrepreneur.

If we assume again, for the sake of simplicity, that the purchase price is the same as the bank loan, then the payment made by the shopkeeper lowers his balance by the amount of the loan, and when it is paid into the bank the debt of the entrepreneur is cancelled.

The ultimate results of the transaction are this: firstly, that the bank's reserve remains undisturbed, and secondly, the community as a whole is richer by an extra product equal to the value of the loan.

On a broad view this is exactly what we should expect to happen, because during the interval of production the loan has enabled the entrepreneur and his employees to subsist at the expense of the real products of the rest of the community: this is very clear if we suppose the entrepreneur and his workmen to have been new arrivals to the district; but in any case the total of immediately consumable goods is unchanged; thus during the period of production, the rest of the community consumes less than it would have done if purchasing power had not been increased by the bank loan placed in the hands of a small section. A slight rise in prices, due to this

additional purchasing power, results in what is called "forced" saving on the part of the community; but in compensation for this, there is somewhere in the community the extra product.

More immediately, however, it is the shopkeeper who does the saving by passing the money into his account at the bank, and for this the bank must pay him interest¹. It does this out of the interest charged on its loan to the entrepreneur, and it charges a higher rate to the entrepreneur than it pays to depositors. The part retained by the bank is a payment for the service of banking.

The above analysis is very much over-simplified, and the actual procedure is much more indirect and complicated, but the fundamental principle remains unchanged.

10. Effects of Bank Money on the Price Level

It is necessary now to take a step forward and extend our illustration of the effects of a bank loan. In the example cited above, the ultimate effect on the reserve was nil, hence the bank could safely make a second loan, and so on; and so long as the loans were always made against the production of goods, other things remaining equal, prices would continue comparatively stable.

In dynamic society, however, that is not necessarily the case, because the application of science to methods of production tends to increase the supply of goods in a greater ratio than the supply of money. This is particularly true where the basis of standard money and credit is a substance like gold, the supplies of which do not necessarily, and automatically, increase with the demand for purchasing power. For this reason, since 1920, there has been an insistent demand from many quarters for a more scientific

¹ If the bank did not pay interest on real deposits, depositors would try to lend directly to borrowers.

regulation of the output of purchasing power, especially from the point of view of its extension.

Allowing for variations in detail, the fundamental principle of all these schemes for preserving a balance between output of goods and output of purchasing power, is that all goods in the process of production, and which are certain to be marketed after an interval of time, should be entitled to the necessary credit, up to their full value at the current prices, on demand.

The main strength of the argument lies in the fact that when production of goods increases while the supply of purchasing power remains relatively constant, the effective demands of the buyers are insufficient to take the stocks of commodities off the market except at a price which renders further production unprofitable to the producers.

In one sense, credits like these are producers' credits, but indirectly they are consumers' credits, because the producers themselves are large consumers of raw materials. Ultimately too, a large part of these loans passes directly as wages to the employees of the borrowers, and indirectly as wages to the producers of the raw materials used for the purpose of producing finished commodities.

The argument is plausible and not wholly devoid of truth, but such a system has one very vulnerable point. It assumes that the velocity of circulation of the additional money will just equal the velocity of circulation of the additional goods.

It is true that if *A*, for example, raises a loan from his banker in order to bring into being an equivalent value of goods to the order of *B*, and that if *B* immediately consumes the goods when they are ready for consumption and pays *A*, who in turn pays the bank, then a service has been rendered to producer and consumer with no permanent ill effects on prices. This is because an increment of goods has been taken off the market and

an equivalent increment of money has been withdrawn from circulation. The loan has had no permanent effect on prices, because the ratio of money to goods is now the same as before the transaction.

In actual practice, however, the above hypothesis is more likely to be the exception than the rule. In most cases of loans for production there is a long interval of time between the creation of the additional money and the marketing of the goods, and so long as the loan is outstanding it is liable to change hands many times; and as each successive recipient of the additional money has more purchasing power at his disposal against the same quantity of goods as before,¹ prices will rise all along the line.

When the goods do come on to the market it does not always follow that they will change hands only once before final consumption as in the example cited above. They may change hands many times like the extra money, but so long as they circulate more slowly than the loan, the tendency is for prices to rise.

Against the critics of the existing system it can be argued that purchasing power tends to increase more rapidly than might be supposed at first glance. If, in the past, English bankers have been unduly conservative with respect to their reserves, amalgamations and improved co-ordination between the respective parts of the banking system as a whole, have made it possible now to increase the volume of loans with safety.

And it must not be overlooked that there is an inherent tendency for banks to push their loans even beyond the margin of safety, because loan-making is a profitable business; and this is specially true of long-period loans for capital equipment, as the rate of interest on long loans is higher than on short loans for obvious reasons.

¹ The output of goods will be increasing all the time, but on the hypothesis so will the number of loans.

These matters are very controversial, and economists differ very sharply over them, but there are strong reasons for thinking that the tendency of the banks is to lend too much rather than too little; and this seems to be the view taken by such authorities as Wicksell, Mises, and Hayek. It has already been pointed out that the question of bank loans goes deeper than a simple mathematical relation to the size of the bank reserve. Now the ultimate nature of a bank loan is a transfer of real capital; and if only real capital came on to the market without the intervention of money, a certain rate of interest would be established, determined by the supply relative to the demand for capital. This rate of interest is called by Wicksell and Mises the natural rate of interest, to distinguish it from the market or money rate. When the natural and market rates coincide, money is said to be neutral towards prices; *i.e.* money in itself has then no tendency to raise prices above, or lower them below, what they would be in a pure barter economy.

In practice, however, the amount of borrowing is determined mainly by the market or money rate of interest. Under normal circumstances, a fall in the rate of interest will increase the demand for loans, while a rise will have the contrary effect.

Now certain Continental authorities, Wicksell, Mises, and Hayek, for example, contend that there is a strong tendency in the banking system to allow the market rate to fall below the natural rate, with the result that more money is lent than is justified by the amount of real loanable capital available, and in consequence, the price level is inflated above what it would be in a barter or natural economy.

It may be objected from the side of the banks that it is a little difficult for them to do this. It has already been shown that if one bank increased its loans relatively to those other banks (in effect, this means to lower its rate of interest), then it would quickly be in difficulties at the

Clearing House. But there seems no reason why competition among the banks on the initiative of a single bank should not compel all to lower their rate of interest below the natural level, except where the tendency is checked by the control exercised by the Central Bank—a matter that will be examined in a later section.

But, as Hayek points out, the danger is not so much that the banks will consciously drive the market rate too low, but that they will fail to raise the market rate quickly enough when for any reason the supply of real loanable capital falls short of the demand for it; in other words when the natural rate of interest rises.

This negative way of keeping the market rate below the natural level is the more likely one to occur in practice, because banks naturally hesitate to raise the rate of interest against their customers for fear of driving them elsewhere. In the long run they may be forced to do this, but in the intervening time a great deal of mischief may be done.

It may be noted that the above argument applies with greatest force when there are large reserves of idle real capital. Under such circumstances the natural rate of interest would be so low that the innate conservatism of the banks would be sufficient to prevent the market rate from being depressed too far. But reserves of idle real capital are likely to exist only in the short period. In the long run, Wicksell, Mises, and Hayek appear to stand on much firmer ground than the more-money enthusiasts.

11. The English Banking System

The English banking system has its headquarters in London, and if we extend the term to cover the financial system as a whole, it falls naturally into three divisions. The centre or pivot is the Bank of England, round which are gathered the joint-stock banks, while on the fringe of the system stands a miscellaneous collection of financial institutions of different kinds, including foreign banks, the

Stock Exchange¹, discount and accepting houses, and the individual bill brokers,² comprising what is usually known as Lombard Street.

12. The Bank of England

The English banking system centres in the Bank of England. This is in practice, at least to some extent, a State bank, for it is closely connected with the Government and it deals with the State finances, but it is managed by private individuals who, strange to say, must not be professional bankers, though they may be members of accepting houses and other mercantile institutions. Though privately owned, the Bank has shown great public spirit, and it is largely due to its wisdom and fine judgment that financial difficulties have not been more frequent and more serious in the history of the last century. The new directors of the Bank are chosen as young men, and, though they retire for a period, they are re-elected; a proportion of directors retire every year, but the older men remain. The new directors are chosen with great care, and good men are available, for the post is one of honour, but the important decisions are vested in the older directors, who are likely to follow a cautious policy of continuity.

The great importance of the Bank of England lies in the fact that it is the Central Bank; this means that its primary function is to force the commercial banks to adopt a monetary policy in line with that of the State. The Bank of England is also the bankers' bank; the banker to the Government; the note-issuing authority; and the lender of last resort to the Money Market. It is also the seat of the gold reserve of this country, and when we are

¹ The Stock Exchange is a part of the Money Market only to the extent that it borrows from it. Strictly speaking, it is a part of the Capital Market—the market for old capital.

² The discount house is simply a bill broker on a large scale. The difference is merely in the magnitude of its operations; see Withers: *Meaning of Money*, page 140.

on the gold standard the protection of this reserve is one of the most important functions of the Bank.

Before the war, the Bank felt the full force of any financial crisis; its importance was so fully recognised that it realised its obligation to save its keenest rivals, the bill brokers, from ruin; in a time of crisis, the ruin of these men might have destroyed the whole credit structure. Though it was a private bank in name, the State realised an obligation to help it when the task of upholding the credit of the country proved too heavy. The achievement of the Bank is the more notable in that the policy of keeping a very large reserve meant the locking up of much banking capital, and thus a serious diminution of profits.

The fact that the Bank has always treated profit-making as secondary to its primary function of preserving the financial system of the nation intact, differentiates it sharply from all other English banks.

HISTORY OF THE BANK.—The peculiarities of the structure of the Bank can be understood only when its history is known. It originated in the support of William III. by the Whig moneyed classes; since then the connexion between the State and the Bank has been unbroken; it is understood that the Government will support the Bank in time of crisis. Thus the French war led to the suspension of specie payments, which lasted from 1797 to 1821; the Bank notes became inconvertible, *i.e.* there was no necessity to give gold in exchange for them at the Bank; the Government controlled the issue, and the result was an excessive creation of notes. The Bullion Committee, which sat in 1810, reported that the prevailing high prices were due to over-issue of notes.

Even when convertibility was restored, the Bank was repeatedly in difficulties through the depletion of its bullion and specie reserve. At this time, private banks were allowed to issue their own notes, as were joint-stock

banks after 1826, if not situated within 65 miles of London. Thus the dangers of over-issue could not be avoided by the action of the Bank alone. There were two schools of thought: the upholders of the Currency Principle held that an increase in note issue, even under convertibility, would lead to an export of gold, according to Gresham's Law, while the defenders of the Banking Principle believed that no danger existed as long as the notes were convertible. It was left for Bagehot at a later date to show that the prime necessity was a reserve large enough to inspire confidence, whatever might be the actual amount of the note issue. One school believed in a rigid system of issue, and the other in a system adapted to industrial needs; the first was too rigid at times when money was "tight," while the latter overlooked the importance of a sufficient reserve.

BANK CHARTER ACT.—The Bank Charter Act of 1844 put into practice the principles of the Currency School: it made note issue much more rigid. New banks of issue were forbidden, and an existing bank which amalgamated lost its rights; existing banks of issue were allowed their normal circulation of notes, but could give up their rights for a consideration; when such banks lost their rights, the Bank of England was allowed to increase its issue against securities by two-thirds of the lapsed amounts. The number of such banks of issue fell from nearly three hundred in 1844 to nine (three joint-stock and six private) in 1920, and the last were absorbed by amalgamations in 1921.

The Bank itself was subjected to stringent control; the Issue Department was separated from the Banking Department; the latter section was left uncontrolled, but had no direct influence on the note issue; when it required notes it had normally to give gold in exchange for them as had any other company or individual. The Issue Department could circulate notes against securities to an

extent of about 14 millions, 11 millions representing the permanent Government debt; this amount has since been increased by about $5\frac{3}{4}$ millions, this representing the amount taken over from banks whose issues had lapsed. All notes issued in excess of this amount had to be covered by an exact equivalent of precious metal; the Issue Department could keep one-fifth of the necessary metal in silver, but no silver is now kept in this Department. But for the War, the fiduciary issue would to-day be limited to $19\frac{3}{4}$ millions, covered by securities only; all remaining notes being covered by gold. The danger of over-issue of notes was thus reduced to a minimum, and the Reserve in the Issue Department made amply sufficient.

The War changed the situation by substituting Treasury Notes for gold currency, and in 1928 the fiduciary issue of Treasury Notes was merged into the Bank of England note issue. Through this merging, the amount of the fixed fiduciary issue of the Bank of England was raised to £260,000,000, and in 1931, as a temporary measure only, this amount was raised to £275,000,000.

EFFECTS OF THE ACT.—It was believed by the opponents of the Act that the policy would cripple trade, as there would be insufficient currency in times of prosperity; this has not occurred, for a great development of the cheque system followed the passing of the Act. The unexpected result followed that notes were largely displaced by cheques and bills, at least in respect to commercial transactions. This would probably have happened in any case, but the Act supplied a stimulus to the development of cheques which materially hastened the process of change. The rigid system of note issue necessitated a new means of adapting media of exchange to trade conditions, and the elasticity of the bank deposit system, taken in conjunction with the increased use of cheques, allowed of the expansion

of credit in a form independent of the notes circulated or the bullion held by the Issue Department of the Bank.

Thus the Act guarded against one serious danger, but left another source of trouble untouched: the Issue Department had no control whatever over the activities of banks, and the excessive use of cheques might have consequences at least as serious as an over-issue of notes. The reserve of the Banking Department was not affected by legislation, but events have made the Bank of England the most important bank in the world. Public confidence in it is proverbial, largely because it is widely believed that the State is behind it and would step in to prevent its failure. For this reason the Bank has become the "banker's bank." All the arguments which show the necessity of a sufficient reserve to an ordinary bank apply with greater force in this case. All other English banks, private or joint-stock, London or provincial, have such confidence in the Bank that they keep their own private reserves with it; they wish to avoid the trouble of keeping a stock of notes or bullion, and so deposit all their money above what they require for immediate purposes where they can recall it at once in case of need. Now the Bank of England receives all these accumulated reserves and deals with them as an ordinary bank deals with its deposits; it knows that while some deposits are always liable to be demanded, the proportion which will be demanded in normal times can be estimated fairly accurately. Thus the Banking Department lends out a large proportion of the money which it receives, discounting bills and holding securities instead of currency.

THE BANK RESERVE.—It follows that the huge volume of credit which is a leading characteristic of modern economic life is based on a comparatively small stock of gold and notes in the Banking Department. The Bank is thus exposed to the same danger from the commercial

banks as these are from their depositors; if the ordinary banks become anxious about their position they may withdraw their money and the Bank Reserve will be depleted.

The difficulty may be far more serious even than is here suggested: the English banking system is a single reserve system, and so the whole weight of any strain whatsoever must be thrown on the Banking Department. The Bank must fear not only the extraordinary demands of the banks, but also those of the bill brokers, the private individuals who carry on a keen competition with banks for discounting business. Such men borrow most or all of their trade capital, and though they pay only a low interest for it, as it is lent on short notice, they must utilise it in some way; the bill brokers are more dependent on the market conditions for money than are the bankers, and are thus a better index of the state of the market. If there is serious stringency, the bankers will call in their short loans, and the bill brokers will be obliged to take their securities to the Bank; the brokers must have money to meet their engagements, and securities, however good, are useless in such times; the Bank must discount the securities of these men or a collapse may be engendered by a dislocation of credit.

Before the War, London was the financial centre of the world. Large foreign deposits were held by the Bank, and this fact enormously added to the danger of a serious crisis. First, the Bank was peculiarly susceptible to hostile action on the part of foreign financiers; a foreign Government, for example, might have collected large deposits in London, and then suddenly withdrawn them. Again, there was always a real and lasting danger that the foreign demand for bullion might be abnormally large just at the time when for some reason the reserve of the Bank was below the normal; *e.g.* at holiday periods when most people increased their supply of cash in hand.

DANGERS TO THE RESERVE.—The reserve in the Banking Department has been in serious danger on three occasions between 1844 and 1914, and on each occasion permission to break the law was given by the Government. In 1847, the reserve fell to little more than a million pounds; the reserve in the Issue Department was untouched, but was unavailable. Now credit was not so shaken that Bank of England notes were regarded with suspicion; the Bank note was as desirable as the metallic money it represented. In the last resort, the reserve in the Issue Department was so large that if available for use it would probably have restored confidence even if the note had come under suspicion. Fortunately the actual gold was not needed, for notes were even then an efficient substitute.

The Bank received a letter of licence, allowing it to borrow from the reserve in the Issue Department; the mere fact that the Bank was allowed to do this calmed the fears of the community and a disaster was averted. In 1857, the reserve fell below a million pounds, and again permission was granted to make use of the Issue Department; this time, the excess fiduciary notes were actually issued and the crisis subsided. After 1860, the Bank made use of its discount rate to increase the reserve in critical times; probably a crisis was thus averted in the early sixties, when large amounts of silver were sent to India to pay for raw cotton. In 1866, the reserve was large enough for normal conditions, but a crisis occurred through the failure of Overend, Gurney and Co.; and again the Government gave permission to circulate uncovered notes. After that time, the law was never broken till 1914, when an issue of three million such notes was quickly put into circulation. This issue would have had a trifling influence on public confidence, but it was quickly followed by an issue of notes direct from a Government department; the Treasury note displaced the gold coinage, as regards actual circulation. The Gold Standard Act (1925) made

Bank notes convertible again, but Treasury notes expressly inconvertible. In November 1928, Treasury notes were replaced by Bank notes.

Another feature of the Act of 1925 was the fact that the Bank was made to buy gold when brought to it, at the rate of £3 17s. 9d. per ounce of standard gold, *i.e.* 1½d. per ounce less than the Mint price. But although we returned to the gold standard in 1925, the standard was a bullion standard and not a full gold standard, that is to say, notes continued to circulate as currency; not gold coins. During the crisis of 1931 the Gold Standard Act was suspended for an indefinite period.

THE WEEKLY RETURN.—The Act further obliged the Bank to publish weekly accounts in a standard form. An example is given on the next page.

In the first balance sheet the notes issued must include those held by the Banking Department, for the two departments are separate. The first item on the other side refers to the perpetual debt owed to the Bank by the nation. "Other Securities" are the securities against which the remaining fiduciary notes are issued;¹ the notes issued against the Government Debt do not alter in amount, while the other fiduciary issue increased till the issues of the other privileged banks all lapsed; the sum of these two values could not be greater than a fixed maximum. In 1928, however, the fiduciary issue was raised to 260 millions.

The amount of gold coin and bullion depends on the amount of metal exchanged for notes: this item varies from week to week.

The second balance sheet resembles that of an ordinary bank. The "Proprietors' Capital" is a constant amount,

¹In 1928 the Bank was allowed to include among the securities held against the fiduciary issue silver coin not exceeding £5½ million in value.

and the "Rest" consists of undivided profit which never falls below three millions.

WEEKLY RETURN, DEC. 21ST, 1938

ISSUE DEPARTMENT

<i>Notes Issued :</i>		Government Debt	£11,015,100
In Circulation ..	£503,037,982	Other Government	
In Banking Dept.	53,377,746	Securities ..	218,640,389
		Other Securities..	84,976
		Silver Coin ..	259,535
			<u>£230,000,000</u>
		Fiduciary Issue ..	£230,000,000
		Gold Coin and	
		Bullion ..	326,415,728
	<u>£556,415,728</u>		<u>£556,415,728</u>

BANKING DEPARTMENT

Proprietors' Capital	£14,553,000	Government	
Rest ..	3,378,282	Securities ..	£72,121,164
Public Deposits ¹ ..	12,522,205	Other Securities..	24,795,987
Bankers' Deposits ²	98,337,684	Discounts and	
Other Deposits ² ..	37,312,266	Advances ..	14,911,250
		Notes ..	53,377,746
		Gold and Silver	
		Coin ..	897,290
	<u>£166,103,437</u>		<u>£166,103,437</u>

The "Public Deposits" resemble ordinary bank deposits, but they represent money deposited with the Bank by the Government; so far, the relation of the Government to the Bank is that of a depositor to an ordinary bank. "Other Deposits" represent the money belonging to private individuals or corporations; as before explained,

¹ Exchequer, Savings Banks, Commissioners of National Debt and Dividend Accounts.

² These two items are grouped as other deposits in the text. This is a typical week's return.

the Bank manages the finances of the State and also holds the reserves of other banks. In keeping these deposits, the Bank performs a useful function and pays no interest on them; on the other hand, they must to a large extent be kept idle.

Among its assets, the Bank holds interest-bearing securities. It keeps Government securities, but its holding of "Other Securities" is usually limited to the "gilt-edged" variety, *i.e.* those which possess such confidence that they are practically as desirable as money itself. In times of crisis, the Bank may relax its usual rules and lend money on securities which it would not ordinarily accept.

The notes issued by the Bank of England enter circulation through the medium of discounts and loans, and ultimately find their way into one of the following groups: the stocks of money held by private individuals against current expenses; the till money of the shopkeeping class, railways, post office, and so on; and the till money kept in hand by the bankers. A little reflection will show that between these three quantities there is a very close connexion. Every week millions of pounds leave the bankers' till money to become business money for a few hours before being distributed as wages. But the stocks of money held by the wage-earners, and other private individuals are continually depleted, and by the end of a short period the money has passed through the hands of the shopkeepers back into the tills of the banks again.

In one sense the suspension of the gold standard in 1931 has not upset all the fundamental principles of 1844. The currency is no longer tied to gold and it is less rigid than in pre-war days, but the Bank cannot issue notes to any extent it pleases. Beyond the limits of the fiduciary issue, notes can still only be issued against gold. It is therefore incorrect to suppose that we have now a managed currency as that term is usually understood.

It should be noted, however, that the fiduciary issue is less rigid than formerly. Until recently, the Government sanctioned an increase of the issue only in a national emergency, as during the crisis of 1931, when the issue was raised temporarily to £275,000,000. The practice has now begun of obtaining Treasury sanction for a temporary increase at Christmas time, and it is possible that this practice may be extended to other occasions.

The active note circulation should be distinguished from the note issue. The active circulation is that part of the total issue that is circulating through payments. The passive part of the issue is hoarded as reserve by the banks and to a much smaller extent by private individuals.

13. The Commercial Banks

In normal times the bulk of the country's banking business is done by the ordinary commercial banks. Down to 1914, these banks confined themselves chiefly to home business, but that is not the case to-day.¹ The main business of these banks is lending to manufacturers, merchants, and stockbrokers, either by discounting bills of exchange or by the creation of overdrafts. Loans are also made on the security of various kinds of property that can be realised almost immediately, if necessary, stock-exchange securities, for example.

Banks do lend on mortgage of real property, land, and buildings, but only to a relatively small extent. Loans of this kind have the disadvantage of locking up assets for long periods, and in pre-war days they were regarded as unsuitable for bankers, as in times of panic they could not be realised on demand. Recent changes in the banking system, however, would appear to have robbed this argument of much of its force for the following reasons.

In the first place, the bulk of the ordinary banking business of the country is now in the hands of five huge

¹ See Weston : *Banking and Currency*, 204.

concerns, each of which is of vastly greater financial strength than that of the banking firms of the nineteenth century. Secondly, for obvious reasons, if one of these banks were in difficulties, the others would come to its assistance. In the case of extreme necessity the Bank of England and the Government would come to the rescue.

All the banks keep a part of their resources as reserve at the Bank of England, and any surplus is lent to Lombard Street as "call money," *i.e.* from day to day, or for very short agreed periods, and is used by the bill brokers and financial houses for the purpose of discounting bills of exchange and making very short period loans on all kinds of securities.

It is the policy of every bank not to keep any of its money idle a moment longer than is absolutely necessary, and loans are often made for a few hours only.

Each bank holds Central Bank deposits for Clearing House purposes. Once the average amount of these for each separate bank has been determined, any arbitrary change made by one bank is reflected in the operations of all the others.

If one bank decides to expand its credit facilities without increasing its reserves at the Central Bank, it not only inflates the currency but indirectly increases the Central Bank balances of all the other banks, so that ultimately they all operate on a slightly larger scale.

COMBINED BALANCE SHEET OF THE BIG FIVE BANKS
WEEKLY AVERAGES FOR A MONTH, IN £ MILLIONS

<i>Liabilities</i>				
Paid-up Capital .. .. .	..	..	..	£64.7 millions
Reserve Fund .. .. .	..	..	..	45.2 "
Current, Deposit, and other Accounts..				1717.8 "
Acceptances, Endorsements, etc. ..				106.8 "
				£1934.5 "

<i>Assets</i>		
Coin, Bank, and Currency Notes, and Balances with Bank of England ..		£203·6 millions
Balances with, and Cheques in Course of Collection on, Other Banks ..	40·2	„
Money at Call and Short Loans ..	107·1	„
Bills Discounted	272·4	„
Investments	477·7	„
Advances to Customers	660·1	„
Liabilities of Customers for Acceptances and Endorsements	106·8	„
Bank Premises Account	39·0	„
Various Small Items	27·6	„
	<hr/>	
	£1934·5	„

14. The Commercial Banks and Credit Facilities

As we have already seen, the main business of the commercial banks is the granting of credit facilities. The question arises, therefore, what determines the credit policy of a commercial bank?

In the first place, each bank seeks to maintain a customary ratio between its cash balance and its deposits; but this ratio tends to be disturbed daily, for new loans are continually made, and outstanding ones are repaid; bills of exchange mature each day. If, therefore, the cash balance increases relatively to loan deposits the bank is left with surplus funds for which it must find a profitable opening. The directions in which these resources will flow will depend on circumstances. The surplus funds may pass to the hands of industrial borrowers, or to the bill brokers, or to investments of various kinds. The decision will depend partly on the demands for credit which the bank expects it will have to face in the near future, and partly on the rate of profit offered by each alternative outlet; in the case of industrial borrowers the bank is influenced by the financial standing of the applicants. In this way, the normal relation between the cash balance and loan deposits will be restored.

In general, then, the credit policy of the commercial banks is determined mainly by the ratio between their cash balances and deposits. Once the accepted ratio has been achieved, further loans cannot be granted unless the cash balance is expanded by the Bank of England. This means that the final decision as to how much credit shall be granted by the commercial banks is made by the Central Bank.

15. Commercial Bank Assets

The assets of a commercial bank may be classified broadly into cash, including call money; bills discounted, advances to business men, and investments in Government securities. These do not exhaust the list, but they are the major items.

These assets possess a common characteristic—that of liquidity—though in varying degrees, and by liquidity is meant the ease with which an asset can be transformed into cash.

Liquidity of assets is of vital importance to a banker, because the very foundation of all banking business is the confidence of the public that a bank will be able at all times to cash deposits on demand.

Liquidity in a broad sense, however, is not the only quality in an asset that is demanded by a banker. There are many perfectly safe securities that can be readily turned into cash on demand that are unsuitable assets from the standpoint of a banker. A long term redeemable Government bond is certain to be paid at maturity, and it can be turned into cash at any moment on the Stock Exchange. But the date of redemption may be years ahead, and in the interval a sale on the Stock Exchange may be made at a loss. This applies with much greater force to industrial securities, however sound.

The type of asset which the banker specially favours is what he calls self-liquidating paper; that is to say, securities

that automatically become cash at the end of a short period. This type of asset is furnished by Treasury Bills and short term bills of exchange based upon real commodity transactions. A second advantage of these securities is that they can be re-discounted, if necessary, at the Bank of England.

But, it may be asked, if the banker attaches such importance to self-liquidity in assets, how is it that advances to business men often constitute the largest single item in a bank balance sheet? Overdrafts based on adequate, though usually long-term securities are not very liquid.

The answer is that advances form the most profitable form of banking business, and a glance down a balance sheet will show that a banker safeguards himself by maintaining a safe relation between his advances and the total of his more liquid resources.

The procedure followed by English banks with respect to assets is in sharp contrast with the Continental tradition. For reasons that follow from what has been said above, English bankers have never favoured the financing of the fixed capital of industry—factory buildings and extensions, machinery, etc.—for such investments are more speculative and less liquid than advances for working capital. On the Continent, on the other hand, it has been customary for the commercial banks to provide industry with fixed capital as well as with working capital. They furnished the capital for the starting of the enterprise, and when it was well-established, either they sold stock to the investing public or else they retained a permanent interest in the concern.¹ The serious losses made by Continental bankers in the depression following 1930 has led to restrictions in the scope of commercial banking in some countries with the object of keeping banking assets more liquid.

¹This matter is discussed fully in *Whale: Joint Stock Banking in Germany*.

16. Lombard Street, or the Outside Money Market

Lombard Street, or the outside Money Market, is the most important market in the world for loanable capital. In it are included foreign banking and financial houses, the English bill brokers, discount and accepting houses, etc. The separation of the Outside Money Market from the English banking system proper is one of convenience only: business is much less specialised than formerly, and to-day the English banks not merely supply the market with short-period loans, but do an increasing amount of discounting and accepting.

THE BILL BROKER.—The bill broker is a dealer in bills. Usually a broker tends to specialise in bills of a particular class which he buys from merchants accepting houses, and from agents abroad, at the market rate of discount. As a rule, however, the individual broker is not financially strong enough to keep the bills in hand until they mature; he therefore sells them immediately to the banks, discounting houses, and other buyers at a small margin of profit. As the success of his business depends on his capacity to supply these buyers with the particular class of bill in demand, he performs a useful intermediary function.

DISCOUNT HOUSES.—There is, of course, no fundamental difference between the broker and the discount house. The discount house merely operates on a much larger scale, and having much greater financial resources can afford to hold a large proportion of its bills up to maturity. It is, therefore, much less dependent than the bill broker on daily fluctuations in the rate of interest on very short period loans.

It is, however, easy to exaggerate this point, as all discount houses borrow largely from the banks; hence any rise in the rate for bank loans, or any restriction in their amount, is reflected in the operations of these houses.

The discounting of bills requires a specialised knowledge of trade and traders: discounting has fallen largely into the hands of men who have made this branch of banking their peculiar business. Interest and date of maturity present no difficulty: a clerk can estimate the discount on the face value when payment at maturity is certain; the discount on a bill of £1,000 due in three months will be taken as £10 when interest is 4 per cent. (the true discount would be £9 18s.). Discount houses must be able to estimate with some accuracy the real value of each bill, *i.e.* they must know what is the reasonable charge to be made for uncertainty; to that part of the discount which is the compensation for waiting till maturity is added a variable amount depending on individual cases. The discounting of any single bill is a speculation, for payment is never quite certain, but when a bank makes a speciality of discounting, it makes an assured profit, on the whole, in normal times.

ACCEPTING HOUSES.—Accepting houses are another class of banks with special functions.¹ A manufacturer may be quite solvent, and yet not able to convince a discount house as to the worth of his bills; in this case he may pay an accepting house to put its name to his bill; this done, it will probably be immediately discounted by a discount house; the latter is doubly safeguarded, for it has confidence in the credit of an accepting bank, and in addition the original acceptor of the bill is responsible for payment. If a Manchester cotton merchant receives a bill from a foreign customer, he will pay what is in effect an insurance to the accepting house and obtain his money, less discount, from the discount house. This system gives a definite price to each bill, and thus bills may be used for payment of debts in the same way as notes or cheques.

¹ They are often described as merchant bankers, but they are not bankers in the technical sense.

The world-wide standing of the London accepting houses has contributed much to the world position of the London money market, as bills accepted in London were discounted in London. Since the War, and especially since 1930, the accepting houses, and the discount market generally, have received a severe set back on account of the decline in the use of the trade bill. This has been due to several causes, the most important of which is the greatly reduced volume of international trade; the greater use of the bank draft in foreign trade; and the almost complete substitution of the overdraft for the inland bill in domestic trade. At the present time the main paper in the discount market is a Government finance bill known as the Treasury Bill.

TREASURY BILLS.—The Treasury Bill is a promissory note of the Government to pay the holder a certain sum, usually £5,000 or £10,000, in three months. As this is an absolutely safe security it can be discounted at very low rates, and much of the funds of the market (including home and foreign money) that was formerly invested in trade bills is now invested in Treasury Bills, the issue of which varies with the needs of the Treasury.

Government short-term borrowing is made necessary by the fact that expenditure takes place continuously; on the other hand, income accrues only at intervals; the issue of Treasury Bills therefore bridges the gap.

Incidentally, the Treasury Bill is an important factor in the Government inflation or deflation of the currency as the banks treat these bills as equivalent to cash reserves in the matter of expanding or contracting credit.

17. The Central Bank and Currency Control

The most important function of the Bank of England is that of controller of the volume of the currency. The management of the currency can be effected in a number of

ways, but the most important are the Bank Rate and what are known as open market operations.

THE BANK RATE.—The fact that borrowing and lending is the main element in our banking system, taken in its broadest sense, leads us up to the question of the Bank Rate. There are, of course, two distinct discount rates or rates of interest in the money market, the Bank of England rate, and the market rate.¹ The Bank of England rate, or Bank Rate, is the official minimum rate at which the Bank of England will discount "first-class" bills. Normally it is higher than the market rate, and does not fluctuate daily with the supply of, and demand for, bills. It is fixed on a Thursday, and except under very extraordinary circumstances, it remains in force until the Thursday following. The market rate, as the name implies, is the resultant of the forces of supply and demand for bills in the money market outside the Bank of England.

As the market rate stands in relation to the Bank Rate, and tends normally to rise and fall with it, we shall limit our attention to the Bank Rate, which is of world-wide importance in several respects.

Under ordinary circumstances the official rate is largely formal, as it only rules at the Head Office, and even there the Bank will discount for its regular customers at the market rate. The reason for this anomaly is that otherwise, in the ordinary way of things, the Bank of England could do no discount business. When, however, the Bank is either discounting bills, or making advances, at the official rate, the Bank Rate is said to be effective, because it then exercises some control over the "price" of money in the London money market.

When the Bank Rate is effective, a rise in its rate means that the discount rates charged by the bill brokers and other

¹ For a table showing the different market rates for different securities see Weston: *Banking and Currency*, page 115.

banks follow suit; the rate of interest to investors is also influenced then by the Bank Rate; before the War, most banks offered a rate of interest to small investors which was a fixed amount below the Bank Rate.

In Bagehot's time, the Bank Rate was normally effective, and any rise in its rate was felt immediately throughout the money market, but that was because in those days Lombard Street could not discount the whole of the bills on the market without borrowing from the Bank of England. That is not the case to-day: the greater financial strength of the outside banking system has made Lombard Street less dependent on the Bank of England than formerly.

In these days, therefore, when the Bank of England wishes for any reason to make its rate effective, it has to adopt special measures; but before following up this matter it is necessary to make clear the primary and peculiar function of the Bank Rate.

The Bank of England has always been the guardian of the English reserves of gold, and under an effective gold standard these reserves are always liable to be seriously depleted, as has been explained in a previous section.

Now so long as an effective gold standard is maintained, the Bank of England cannot refuse to discount foreign bills in gold, and thus prevent its export; nor can it redress the balance by refusing home advances for fear of creating a crisis. It therefore raises its rate of discount, and as the rate of interest on other investments rises in sympathy, a double purpose is achieved. On the one hand, the higher rate of interest earned in London attracts gold from abroad, and is also an incentive to those abroad with claims to gold on London, not to withdraw their balances; while on the other hand, borrowing is discouraged.

OPEN MARKET OPERATIONS.—If at such times the Bank Rate was not effective, the Bank of England had to take special measures. The usual first step was to inform the

members of the money market that the discount rate must not be allowed to fall below a certain figure, and the members usually responded.

If, however, for any reason the market failed to come into line the Bank resorted to open market operations, the object of which was to reduce the balances kept by the commercial banks at the Bank of England. The result of this was that the banks were compelled to restrict their loans and follow the policy set by the Bank of England.

The principle of open market operations is very simple. Let us suppose that the Bank of England wishes to force an expansion of the currency. To achieve this, the reserves of the commercial banks at the Bank of England must be increased. The Bank therefore buys Treasury Bills in the open market and pays for them with cheques drawn on itself. The sellers of the Bills pay these cheques into the commercial banks which present them through the Clearing House to the Bank of England. The result of the transaction is that the balances of the commercial banks at the Bank of England are increased by the value of the Treasury Bills, and as it is against the interest of the banks to hold idle balances they proceed to lend more to the public and so increase the supply of money.

Conversely, if the Bank of England wishes to force a contraction of credit and currency it will effect a reduction in the reserves of the commercial banks by selling Treasury Bills in the open market. The buyers pay with cheques drawn on their commercial banks, and the value of these cheques is deducted by the Bank of England from the balances of the commercial banks. The latter, finding their balances at the Bank of England reduced, are compelled in their turn to restrict their loans and, indirectly, the amount of money in circulation.

Open market operations are not confined to the purchase and sale of Treasury Bills. The Bank of England can cause an increase in the reserves of the commercial banks

by buying gold from the bullion dealers. The gold is paid for by cheques which, as before, are paid into the commercial banks, and when these are presented to the Bank of England the bankers' balances are credited with the amount. The Bank of England passes the gold to the Issue Department, and receives in exchange notes which it holds against its increase of indebtedness to the commercial banks.

In pre-war days the Bank Rate was the primary weapon in monetary control. Since the War the policy of the Bank of England has been to rely mainly on open market operations for the smaller day to day variations. A rise in the Bank Rate works more slowly and indirectly, and more drastically. It slows down business when the causes of the rise may be of a temporary nature *only*, and an unfortunate psychological impression may be created in the minds of business men. The Bank Rate is the more suitable means of control in the case of large and more permanent changes, but as a means of control of small temporary variations open market operations cause less disturbance.

There are several limitations, however, on the power of the Central Bank to rigidly control the currency. In the first place its domestic policy cannot be pursued irrespective of the effects it may have on the foreign exchanges. The policy of a Central Bank is guided by the situation abroad as well as by that at home.¹

Secondly, any action that it takes to expand or to contract the supply of currency, through open market operations, may be off-set by the commercial banks changing their ratio of cash reserves to loans. That ratio is not a legal one so the commercial banks are not compelled to expand or contract credit according to changes in the size of their balances at the Bank of England, at least up

¹This matter will be understood when the chapter on international trade has been read.

to the point at which their own safety is in danger. Thirdly, an expansionist movement by the Central Bank would be defeated if the public decided to hold more of its money in cash. It might appear that the Central Bank could counteract that tendency by purchasing additional securities, but the power of the Bank to do this is limited by the size of the fiduciary issue. An increase in the supply of credit means an increase in the demand for currency, but the number of notes which the Bank can issue without acquiring further gold is limited by law. For the Bank of England to have complete control over the currency the fiduciary issue must be unlimited, and the ratio between the reserves and loan deposits of the commercial banks must be fixed within narrow limits. At the same time the control exercised by the Bank of England is very strong, even though it may not be absolute in theory, and that control is being increased by the fact that Treasury sanction for a temporary increase in the amount of the fiduciary issue is now being given in circumstances other than a national crisis. The fiduciary issue was temporarily increased during the Christmas seasons of 1937 and 1938.

18. The Bank Rate and Industry

The function of the Bank Rate as a means of protecting the gold reserves has been considered by many authorities as the primary function so long as a country was on an effective gold standard, but there is another way of looking at the matter which merits attention.

Independently of any question of protecting the country's gold reserves, a rise in the Bank Rate, when it proves effective, tends to reduce the quantity of bank money in circulation. Now on any theory of money, a rise or fall in the Bank Rate, by contracting or expanding the supply of purchasing power, would exercise a corresponding effect on the general price level, that is to say, a rise in the Bank Rate would cause a fall in the price level, and conversely,

with every fall in the Bank Rate, the price level would tend to rise.

Many authorities, therefore, have regarded the Bank Rate primarily as a means of regulating the quantity of bank money in existence, and indirectly, the general level of prices.

On the precise way in which a rise in the Bank Rate affects industry there are several opinions. Hawtrey thinks that the rise in the short-term interest rates caused by a rise in the Bank Rate affects the willingness of dealers to hold stocks of finished and partly finished goods. These stocks are financed by short-term loans so that a rise in short term interest rates increases the cost of holding stocks. Wholesale dealers therefore seek to reduce their stocks by curtailing their orders to the producers, who, in turn, restrict output and lower prices. That, in turn, reduces the volume of employment for the different factors of production with the result that money incomes are gradually reduced. At this stage the retail trades begin to be affected so that the retailers restrict their orders to the wholesale dealers, who, in consequence, cut their orders to the producers still further. It is often objected against the Hawtrey theory that interest payments is only one factor in costs so that the effect of a normal rise in the Bank Rate must be necessarily small. On the other hand, as has been shown above, once a deflationary movement is initiated, the effects tend to be cumulative.

On Mr. Hawtrey's argument a fall in the Bank Rate would produce the opposite effects. Wholesale dealers would seek to increase their stocks of goods; producers would be encouraged to expand their output, and the volume of employment, and the earnings of the various factors of production, would increase. The demand for commodities in the retail trades would expand so that the retailers would increase their orders to the wholesale dealers who, in turn, would order further goods from the producers.

On the other hand, Mr. Keynes considers the effect of Bank Rate changes on the long-term interest rates to be of greater importance. It is true that the first effects of a rise or fall in the Bank Rate is on the short-term interest rates, but these effects are gradually passed on to the long-term market in the following way. When the short term rates of interest rise business men find it profitable to sell long-term securities in order to reduce their indebtedness to the banks. At the same time, persons with funds to invest now find the short-term market relatively more attractive. These factors combined tend to lower the price of long-term securities, and as their yield remains unchanged the rate of interest on them has risen in effect. There is a tendency, therefore, for the rates of interest in the long and short term markets to move together in sympathy.

According to Mr. Keynes a change in the long-term interest rates has the same effect on the power of producers to hold stocks of capital goods as a change in the short-term interest rates has on the willingness of wholesale dealers to hold stocks on the Hawtrey theory. Capital goods—railways, factories, machines, etc.—yield an income. If that expected income exceeds the interest charges on their costs of construction, producers will increase their stocks of these goods. On the other hand, if the income expected is less than the interest charges that must be paid, capital goods' extensions and replacements will not be undertaken. On the theory of Mr. Keynes a rise or fall in the long-term rates of interest will produce a sequence of events in the capital goods industries similar to that which has already been noted with respect to finished and intermediate goods in the Hawtrey theory.

On either theory there is a fundamental connection between changes in the Bank Rate and industry, but the connection is not equally strong in all cases, because the elasticity of demand for capital, especially capital goods, varies with circumstances. At the peak of a trade boom,

or in the trough of a depression, the demand for capital goods is inelastic. This is particularly true in the case of a depression; a slight fall in the rate of interest has little influence with a producer when the success of a venture is highly problematical.

The connection between the Bank Rate and industry can be considered from a somewhat different point of view. There is at any time a natural rate of interest, that is to say, a rate that would exist if only capital saved from current income came upon the market. Now if through any cause the rate of interest falls below its natural level, the equilibrium between real savings and investment will be disturbed. Interest rates below the natural level will tend (at least for industrial purposes) to discourage saving and to encourage investment in capital goods, because the cheap money renders production more profitable to the entrepreneur; and prices begin to rise, because this increased investment leads to an increased demand for goods.

This rise in prices will not deter those entrepreneurs who gain command of this cheap money, because so long as the rate of interest remains below the natural rate, prices will rise indefinitely on account of competition for goods and services. It is true that the market rate of interest cannot be kept indefinitely below the natural rate unless at the same time there is a progressive expansion of the output of bank money, but in practice a fall in the rate of interest below its natural level would correlate with a progressive increase in the volume of bank money because of the close connection between the Bank Rate and the market rate of interest.

Interest, however, cannot be kept below the natural rate for longer than a certain period without causing unpleasant reactions on the banks themselves. As soon as the banks become alarmed for their safety the rate of interest is forced up to its natural level and the break in prices begins.

Unfortunately, this invariably marks the first stage of a trade crisis.

The question of the Bank Rate complicates slightly the discussion of divergences between the market and natural rates of interest given in another section. There the question was approached from the side of the operations of the ordinary commercial banks, but, as has been shown above, the lending powers of these banks can be brought under the effective control of the Central Bank by means of the Bank Rate. This, however, does not invalidate the previous discussion. Even if it is conceded that the Central Bank rate is not likely to be kept below the natural rate, the fact remains that, except in times of crisis, the commercial banks have a certain amount of latitude in which to operate. But it is by no means certain that the Bank Rate will not tend to fall below the natural rate in the negative sense. Raising the Bank Rate always causes inconvenience to the business world; hence, especially when the country is off the gold standard, there is a natural hesitation to raise it always to the level warranted by the true circumstances.

19. The Effects of a Changing Price Level on Industry

The belief is widespread among entrepreneurs that rising prices are beneficial to industry, and up to a point, the psychological effect of a rising price level on the minds of business leaders is very marked. Judgments and decisions on future actions are largely determined by anticipations of the course of price movements. Where the price level is continually rising, employers purchase raw materials on one level and sell on a higher, receiving in this way a surplus above normal profits, as was the case during the War years.

The effects, ill or good, depend mainly on the extent and rapidity of the rise. A very slow and gradual rise of the price level tends to infuse confidence in, and to stimulate

industry. Wages and other contractual incomes lag behind the rise in commodity prices, but where the change is slow and gradual, the course of future events can be usually anticipated and the necessary adjustments made. Under these circumstances the gains to entrepreneurs are largely illusory, as continually rising costs tend to wipe out surplus profits.

The worst effects of rising prices are felt when the changes are large-scale, and the course of future events uncertain. Adjustments are made only with great difficulty, and entrepreneurs gain at the expense of the wage-earners and recipients of fixed incomes. It is true that there is less actual unemployment, but that is because the labourers are receiving less real value as wages; but this usually passes unrecognised owing to the custom of valuing wages at their face amount.

Experience, too, teaches that adjustments of wages to a rising price level are not made automatically. Even where wages are regulated by a Board in accordance with the cost of living, the awards are not always satisfactory from the men's point of view; and where no such regulation exists the only procedure is to make use of the strike. It is true that in times of prosperity, real or apparent, a mere threat to cease work may produce the desired effect, especially if the employers believe that they can pass the burden on to other shoulders; but warfare of this kind is costly in more ways than one: it has a depressing effect on industry, and, what is perhaps even more undesirable, it intensifies class antagonism.

A rapidly rising price level encourages speculation and usually leads to a disproportionate expansion of certain industries which appear to offer special opportunities for large profits, with the result that all the component parts of the industrial system fail to march forward in harmony. In the final stage there is relatively too much of one or more commodities and relatively too little of the others; hence

occurs what is familiarly, but inaccurately, known as an over-production crisis.

Incidentally, it may be noticed that speculation, though no doubt a cause of rising prices in some cases, is, in the problem under consideration, an effect rather than a cause. As a rule, the ultimate cause of rising prices is, as was noted in the last section, intimately connected with a rate of interest that is too low. Care must also be taken to distinguish speculation in the sense used above from speculation on the produce exchanges. There, speculation is a means whereby prices are steadied and fluctuations of a violent order are eliminated.

During such a period as 1929-1932, the economic problem was not rising, but falling prices; and the fact that falling prices have a depressing effect on industry is obvious enough to anyone who lived through those years.

Falling prices hold up production for the same reason that rising prices expand it. With prices rising, production expands because goods can be bought on one level and sold on a higher. In the case of falling prices the converse holds good. Producers restrict output not only from the fear of having to sell at a loss, but also because they have every inducement to hold up their purchases of raw materials in the hope of a further fall. At the other end, buyers are held back by the same consideration.

If all prices fell proportionately (and this applies equally to a rise), little harm would accrue, but in practice that is not the case. Certain overhead charges on industry, rent, and interest on mortgages are fixed for long periods, and adjustments lag considerably behind the fall in commodity prices. Wages, in particular, are difficult to adjust to the new conditions. In these days they are much less flexible than formerly, partly because the working classes are more strongly organised industrially and are in a position to exercise political pressure; and partly because they have

a reserve price in the form of unemployment insurance benefit.

Reductions in wages are also rendered difficult by the fact that retail necessities are much more rigid in price than wholesale commodities; hence the worker can assert with some show of justice that his cost of living has not fallen to the extent of the employer's demands. The greater rigidity of retail prices in times of stress has caused some authorities to assert that, in matters of credit, the banks are far more lenient to the retail, than to the wholesale trade, and that the solution for the difficulties raised by falling prices is a much sharper contraction of credit to the retailers.¹

So far we have taken the causes of the price changes for granted, but unless this vital point is taken into account, a sound judgment is impossible.

Now price changes can be brought about through changes in the terms of lending by the banks, and the long-run disadvantages of changes of this kind so outbalance any temporary benefits that it would appear that a clear case is made, incidentally, in favour of price stabilisation.

But price changes can take place from non-monetary causes. If for any reason the supply of goods becomes scarce relative to the demand, apart from Government rationing, prices must rise in order to adjust demand to the supplies available. On the other hand, when improved methods of production lead to greater productivity it is natural to expect prices to fall as a means whereby the advantages of greater productivity may be diffused throughout the whole community.

Under such circumstances the advantages of falling prices appear beyond dispute, at any rate in the long run and from the point of view of the welfare of the whole community. But this is only rigidly true in the case of

¹ See Angus: *Reparations and Foreign Exchange*.

a self-contained country under regulated enterprise. If a country's main business is to export manufactured articles to another country in return for raw materials the position is more complex. If prices of manufactured goods fall less quickly than those of raw materials (and between countries they are not likely to fall uniformly), the country exporting manufactured goods will be able to obtain a given quantity of imports at the price of less exports. This would prove a clear gain provided that the exporting industries could transfer their now surplus fixed capital and labour to ease the tension of scarcity of commodities at other points. Under competitive enterprise, however, this is not possible to any large extent except at the expense of heavy loss and a trade crisis.

20. The Capital Market and the Stock Exchange

The capital market must be carefully distinguished from the money market. The money market is a market for short term loans; the capital market, on the other hand, is the market for long-period loans. The capital market really includes two distinct markets—the market in which new capital is raised, and the market in which existing securities are exchanged. The institutions of the market for new capital include the various agencies for the promotion of limited liability companies; the market for existing securities is the Stock Exchange.

If a company desires a loan it issues a prospectus, setting forth its hopes of future profit. The public is invited to buy shares. In time, the investor finds that he has made a good or bad investment, for the dividend, *i.e.* interest, he receives may be more or less than was expected when the loan was floated. Thus the security which the lender receives will fluctuate in value as the dividend alters and as the prospects of future prosperity change. The men who specialise in transactions in shares and stocks (which present technical differences from shares)

are called stockbrokers and stockjobbers. The latter buy and sell stocks on the floor of a Stock Exchange. The most important Exchange is the London Stock Exchange, but there are others in provincial towns.

Industrial securities are of various kinds. They may be an ordinary receipt for money lent. Bonds are often secured by a mortgage, especially in the case of companies (bonds are also issued by public authorities). Debentures are less often secured by a mortgage, but railway debenture-holders can wind up the company if the interest is not paid. Debentures may be repayable at a fixed time, or only on the winding up of the company. The interest is defined, and does not rise above the given limit; the debenture-holder, however, has a first charge on profits, as the shareholders receive nothing till the interest is paid on money loaned.

Stocks and shares in the strict sense of the words represent the holdings of shareholders rather than lenders. They may be divided roughly into two groups, preferred and ordinary. Preference shares usually pay a fixed dividend, which is paid before the ordinary shareholders receive anything, though it is not fully paid if the debenture-holders have not received their interest: the latter must be paid in full before shareholders obtain any dividend at all. Ordinary shareholders normally receive the surplus when every other charge has been met; the dividend is not fixed, and may vary between wide limits. If there are "cumulative" preference shares, their owners are paid arrears of dividend before the ordinary shareholders receive anything; sometimes also the preference shareholders may receive a share in a second distribution if the residual profits are very high. There are numerous varieties of shares and these admit of no simple classification.

The main function of the Stock Exchange is to provide a market for existing capital, that is, to facilitate the transfer of stock and shares of existing companies from

old to new holders, and to float Government and foreign loans.

The essential fact in the Stock Exchange organisation is speed and reliability. Speed is necessary because on certain days millions of pounds worth of shares may change hands in less than an hour; reliability is necessary because otherwise business would be impossible owing to the disputes and uncertainties respecting the fulfilment of contracts. For this reason the stockbroker, though really an agent, is responsible to the Exchange for his client's obligations. As shares change hands at varying prices from hour to hour, the complications arising out of a settlement for each transaction are avoided by (usually) fortnightly Settlement Days. On these days the shares are transferred from the first seller in the fortnight to the final buyer, and the accounts of the brokers are adjusted on lines similar to those of the Bankers' Clearing House.

The banks stand in close relation to the Stock Exchange in the following way. Brokers and their clients are not always able to cover their purchases on Settlement Days, and in such cases they borrow from a bank on the security of the shares. If, while the loan is outstanding, the market price of the shares fall, the bank will demand the deposit of additional securities, or, failing that, call in part of the loan.

It is not necessary, however, for a broker to apply to his bank for a loan, as this type of business has called into being a special class of broker, the Contango Broker. If a broker or his client is unable to meet the claims on him at Settlement Day, he pledges the shares with a contango broker, who, for a charge which is in reality interest on the loan, holds them for the real purchaser until the Settlement Day following. This charge is known on the Stock Exchange as the contango, or carry-over rate.

The Stock Exchange has often been described as a mere gambling institution. A "bull" buys stock he expects will

rise in value, and hopes to obtain a profit by selling at the higher price. A "bear" expects that the price of a stock will fall: he sells stock which he may not possess, hoping to buy it at a cheaper rate when the delivery day falls due. Dealings in "futures" have been considered in connection with corn markets; if the speculative price is given for an article not yet on the market, there are possibilities of great gain or loss. Such dealings are often combined with "option" transactions: the "put," the "call," and the "put and call" are examples of options. The "put" is the right to buy a certain number of shares at a certain price within a certain time; the "call" is the corresponding right to sell shares; the "put and call" is the right to exercise the privilege of buying or selling shares as the holder of the option chooses. The gambler has every opportunity for speculation. Again, the prices of shares are continually fluctuating, not only because there is a real change in their value as the dividend obtainable from them alters, but also because deliberate efforts are made to control share prices: the "bulls" try to force up prices and the "bears" to bring them down. Combinations of speculators may exert great influence on prices of securities either by manipulation of the stock market or by "cornering" of commodities. Stock Exchanges may do immense harm.

This business of speculation in differences has been greatly facilitated by the elaboration of the contango system, and at different times the banks have also been accused of being a party to it. We have already seen that money can be raised from a bank on the security of shares, as well as from a contango broker, and irrespective of stocks and shares, banks habitually make loans to members of the Stock Exchange.

It is, however, a little unreasonable to blame the banks, as even in loans on securities a banker has no means of distinguishing between cases where the securities have been

purchased as a genuine investment, and cases where they have been purchased in the hope of selling at a profit.

Yet speculation has its beneficial side: a reputable exchange does more good than harm in most cases. As speculators specialise in uncertainties they perform a service which would otherwise fall on sober-minded men who wish to be relieved of risk. Competition between speculators tends to equalise the market value of a security and its real value; investors find that they can buy any security they choose, from gilt-edged Government stock to worthless scrip which is merely an opportunity for gambling in the rapid change in its price, and again to securities which give a high but unsafe rate of interest. If an investor deals with a reputable broker he can buy any stock which the broker can obtain from the jobber who buys and sells the stock in an exchange. The relation of the broker to the jobber resembles that of the solicitor to the barrister: professional etiquette is equally binding, and the investor need have no fear of his money if he deals in gilt-edged securities, though they usually carry a comparatively low rate of interest. Much of the money invested on an exchange is as safely secured as if deposited in a bank.

Indeed, an organised market which includes individuals who are mainly experts tends to stabilise prices. Without such a market the price of every security would vary from place to place and fluctuate violently in any particular place from time to time.

Stock Exchange operations not only standardise the market price of different securities, but indirectly they assist investment. A new security, once issued, can be realised at will on the Stock Exchange, so that business men, who can only afford to lock up capital for short periods, can invest in new securities.

An organised stock market is at all times peculiarly sensitive to all the various influences, psychological and financial, for example, which affect the supply of, and the

demand for, a particular security. For this reason the Stock Exchange has sometimes been described as a financial barometer, as its operations continually test the value of each investment. The market price of any stock on any particular exchange at any moment expresses the views of the experts operating there, and as the judgments of one exchange have sympathetic reactions on all other exchanges, the prices on such exchanges as London, New York, and Paris may be said to represent the judgments of thousands of well-informed people.

London Stock Exchange prices are certainly an index to the state of the financial world.

21. Company Promotion

Money may be loaned directly by the public in the case of new businesses, or extensions of old ones. Company promotion is an example: a promotor may perform a public service in combining businesses and so initiating large-scale economies. He buys options of the various businesses and then tries to "underwrite" the issue, *i.e.* persuades banks, etc., to take part of the shares at a discount, thus obtaining a certain sale for part of the stock. The issue is then offered to the public; a dishonest promoter "waters the capital," *i.e.* creates more stock than the business is worth; thus the promoter will gain at the expense of the shareholders, who will find the price of the stock fall at a later date, for the business will not normally pay a good interest on the artificially inflated capital.

The limited liability company is to-day the usual means of financing industry. Sufficient capital may be attracted by advertisement but as a rule the assistance of a special financial machine is required. This machine consists of specialised dealers in capital, banks, stock and share brokers, and the investment and trust companies which are becoming a more and more powerful factor in finance.

Where the amount of capital subscribed by individuals is insufficient the company employs underwriters, who take up on commission either a part of the issue or that portion of the issue not taken up by the public. In the first case, if the shares are immediately purchased by the investing public the underwriters receive their commission for what amounts in practice to insurance. In the second case, they run the risk of disposing of them only very gradually, and possibly at a loss.

The forms in which the capital of a company are raised, and this is true of new issues as well, depend upon circumstances. As has already been indicated briefly, the capital of a company falls into two broad divisions, share capital—ordinary shares or equities and preference shares of various kinds—and loan capital—debentures—and these securities appeal to different classes of investors. A company cannot raise the whole of the capital required by means of debentures because the amount of such capital that can be raised is limited by the assets of the company. The total possible mortgage must be considerably less than the nominal value of the company's assets in order to provide adequate security for the investor. On the other hand, as it cannot usually persuade the public to subscribe all the share capital required, both sources must be tapped. The proportions in which share and loan capital will be raised will be determined by the following considerations:—Debentures can be raised more cheaply than share capital, but the interest charges must be paid whether the company is earning a profit or making a loss; the attitude of a company towards debentures will be governed, therefore, by expectations of the trend of trade in the near future. Other drawbacks are that debentures affect the terms on which share capital can be raised, and their existence makes it more difficult to borrow liquid capital from the banks. Finally, if the interest is not paid the debenture holders may step in and wind up the company.

The great advantage of share capital is that dividends are not paid upon it unless profits are earned, but unless the expectations of profits are high the public will not invest. The possibilities of share capital thus depend on the attitude of the public. When the speculative tendency is strong, and when trade is booming, share capital can be easily raised.

22. Government Loans

Government debts are especially prominent at the present day. In normal times, a government may temporarily be in need of money for the payment of its debts; in war-time it must be financed largely from loans, whose repayment may be postponed indefinitely. Such money must be obtained from the same sources and substantially in the same way as money required in business. As, however, the State is more permanent and commands greater confidence than any private business the National Debt has become a permanent institution and has increased in amount, though its relation to national wealth is more constant. In peace time it is gradually reduced by a Sinking Fund and conversion. The "Funded Debt," *e.g.* "consols" (consolidated stock) and the permanent debt to the Bank of England, carries a given interest (occasionally converted), which is charged on particular taxes; the Unfunded Debt is repayable at a given time; a Floating Debt consists of short-time loans. The Government can obtain temporary supplies of money by means of Ways and Means Advances (from the Bank), Treasury Bills, or Exchequer Bills. During the war, the Government was compelled to appeal directly to the public, which subscribed to the various war loans readily and freely.

The economic significance of this huge amount of Government securities since 1914 lies in the fact that they are securities of a nature on which money can very readily be borrowed, and it has been argued that they were a

contributory factor in the rise of prices during the war years, because so far as purchasing power was based upon them in the shape of bank loans this additional purchasing power was not accompanied by a corresponding increase in the supply of goods. Some authorities lay special stress on Treasury Bills in this respect, because these bills were mostly taken up by the banks and treated as equivalent to cash reserves at the Bank of England.

23. Present and Future Tendencies in Banking

Since the Bank Act of 1844, the number of banks in England has steadily diminished and the private banker has been practically superseded by the joint company. The amalgamation movement has been in process since 1826, but since 1890 it has developed in intensity, and the movement received a special impetus during the war years.

The reason for this is that the financial unit has had to expand correspondingly with the scale of business operations, because, as the unit of business increased in size, it required financial accommodation which the resources of the private banker or the smaller joint-stock bank could not supply.

Banking lends itself to company management: the work is mainly of a routine character and does not call for much enterprise or for unorthodox methods; it does not require the entrepreneur spirit. Thus internal economies are favoured by amalgamations, and so English banking is to-day mainly in the hands of the Bank of England and the other great joint-stock banks. The private bill brokers still flourish, because they have an intimate knowledge of bills which the manager of a bank cannot hope to rival, but their success depends on specialisation. Other branches of banking are successfully carried on: the great success of local co-operative banks in Germany is partly reflected in successful Building Societies and similar institutions in this country. Finally, the insurance

houses perform much work which would otherwise be undertaken by banks. There may be two opposing tendencies in the future: first the tendency towards further amalgamation, and next the growth of new banking forms on the lines of the German co-operative banks, *e.g.* the localised Raiffeisen banks, or the Schulze-Delitzsch banks, making a wider appeal. Co-operative banks have the great advantage that they are in touch with local conditions and thus can grant loans safely at a favourable rate. Such banks have stimulated agricultural development in Ireland. The next generation may witness a great extension of municipal banking.

24. Nationalisation of the Banking System

Nationalisation of banking may refer to the central bank only; or to the system as a whole. The primary argument brought forward in favour of nationalisation is that the main work of the banks is the creation of money, and that as money is a public utility, any profit arising from its creation rightly belongs to the community. Secondly, it is argued that no scientifically planned economy for the cure of unemployment is possible without the public control of the supply of currency, and of the interest rates. Thirdly, it is argued that the present system of competitive joint stock banking is wasteful, and results in an unnecessary duplication of premises and staff.

Many of the arguments, however, apply with equal force to the ownership of land, and many industries. All that can be argued against the nationalisation of land, railways, mines, etc., can be argued against the nationalisation of banking. With respect to the primary point, which is a question mainly of the central bank, the State, through the Treasury, does exercise a considerable control over the policy of the Bank of England. The sanction of the Treasury is required for an extension of the fiduciary issue, for example. Against an extension of State control may be

argued the danger that monetary policy may become the plaything of political parties. Every change of Government may mean drastic changes in monetary policy; times of stress may lead to dangerous experiments, and to violent inflation. The danger may be exaggerated, but a moderate course is more likely to be taken so long as the Bank of England retains a partial independence.

25. The Bank for International Settlements

This International Bank developed under the influence of the question of war reparations, and its policy is under the control of the Central Banks of the world. The Governors of the Central Banks of Great Britain, America, France, Germany, Belgium, Japan, and Italy are ex-officio directors of the Bank.

The powers of the Bank are similar to those of any other modern Central Bank, apart from the fact that it has no right of note issue, and that it cannot accept bills of exchange, own real estate, or acquire a controlling interest in any business concern. It can, however, buy and sell bullion, and discount and purchase bills of exchange.

The Bank has wide powers, but the Central Bank of any country can prevent it from operating within its money market if it considers such veto expedient.

At the present time its value is potential rather than actual; indeed the primary purpose for which it was founded, the adjustment of reparations payments, is apparently dead, but it has two future possibilities.

In the first place, it may provide the means for international co-operation between the Central Banks of the world. Meetings of the Board of Directors of the Bank are, in effect, conferences of Central Bankers, and as these meetings take place several times a year to discuss general matters of policy the sentiment of co-operation must be furthered.

The second future possibility relates to the stabilisation of the value of gold, should the world ever decide to return to the gold standard. If the Central Banks of the world should ever adopt the policy of treating a deposit at the Bank for International Settlements as a part of their reserves, and increasing their reserves when necessary by credits granted by the Bank, the Bank for International Settlements would prove an important factor in the process of stabilising the value of gold, because the monetary demand for gold would be reduced enormously.

26. The Trade Cycle

The phenomena of a trade cycle are too familiar to need detailed explanation. Since the beginning of the nineteenth century, booms and depressions have occurred almost regularly at intervals of about ten years.

Even the surface phenomena of a trade cycle are not without difficulty. When, however, we turn to the causes of the trade cycle we are confronted with one of the most difficult and disputed questions in economic theory, and anything approaching a comprehensive analysis would fall beyond the scope of this work.

Contemporary theories approach the problem from different angles—over-production, under-consumption, monetary policy, etc. A general over-production of goods has been denied by the majority of economists since Say formulated his Law of Markets in 1803. Briefly, Say's Law amounts to this, that every increase in the supply of goods is a corresponding increase in the demand for goods so long as producers have directed their production in accordance with each other's wants.

Under a pure barter economy this is a truism, but under modern conditions it is argued that exchange of product for product falls into two parts—the exchanging of a producer's product for money, and the subsequent exchanging of the money for the product of someone else.

Now between these two operations there is an interval of time, and it is therefore possible to postpone the second part of the operation; hence, over a short period, the demand for goods can be restricted without curtailing the volume of production; and it is the short period that a trade depression covers.

Usually, however, the argument is presented as a relative, rather than a general, over-production of goods. This, it is suggested, can take place in two ways. For various reasons too great a quantity of productive resources tends to flow into a particular channel, and too little into others, with the result that there is a periodical excess of some commodities. In international trade between a manufacturing and a raw materials producing country, improvements in agricultural technique may result in the manufacturing country obtaining all the raw materials it requires at the expense of a smaller volume of imports than formerly. The result is that there appears to be a glut of raw materials, and a depression may occur in the manufacturing country because under the new conditions a larger quantity of resources is specialised in particular directions than is necessary.

THE UNDER-CONSUMPTION THEORY.—The theories of under-consumption are numerous and diverse. Mr. J. A. Hobson argues that in good times profits increase without a corresponding increase in the wages level and purchasing power in the hands of the general public. These surplus profits are invested in capital goods, and the productive forces are greatly enlarged. There is, however, no market to carry off the increased supply of consumers' goods because those who receive profits spend too little on these goods and too much on producers' goods. This relative over-saving causes a crisis which continues until surplus stocks are gradually worked off, as during a depression

wages and profits show an opposite tendency to their course in good times.

The under-consumption theory is carried to a much greater length by writers like Major Douglas, who argue that under the present system most of the goods produced cannot be sold at prices that will cover their costs of production, because, during the various stages of the productive process, a good deal of purchasing power disappears and never becomes effective in the hands of the consumers of finished goods.

According to this school of thought, some purchasing power never reaches the pockets of the consumers of finished commodities, because a good portion of interest payments are never distributed as dividends, but are carried forward as reserves, or invested; and the same argument is applied to insurance payments. Major Douglas contends that, unless consumers' purchasing power is equal to the whole of the costs of production, equilibrium between productive capacity and consumers' purchasing power can never be attained and permanent unemployment must follow.

The fundamental difference between the theory of Mr. Hobson and that of Major Douglas and others will readily be noticed. On Mr. Hobson's theory surplus stocks due to lack of consumption power caused by over-investment in capital goods are worked off during trade depressions; but on the more extreme theories there is only one corrective force and that is a progressive inflation of the currency to counterbalance the ever-increasing deficiency of consumers' purchasing power.

Now so long as no purchasing power is hoarded it is difficult to see how any payments can fail to find their way into the pockets of some final consumer in the long run; and as for the theory that the sum total of consumers' purchasing power must equal the whole of the costs of production, a little reflection will suffice to show that all that is necessary to carry the stock of final commodities

off the market is that consumers' purchasing power shall be equal to the costs in the final stage, so long, of course, as no purchasing power is suspended.

A simplified example will make this matter clear. Suppose that we divide the making of a suit into three stages—that of the wool producer, the cloth manufacturer, and the tailor. Let us assume further that the costs of producing a given quantity of wool are £10 and that the farmer is working on his own capital. Now the £10 costs which include rent, profits, wages, and costs of sheep, is purchasing power transferred partly directly and partly indirectly to the final consumer.

The farmer sells the wool to the cloth manufacturer for £10, and the manufacturer works it up into cloth at a cost of £6, and the £6 must appear as purchasing power in the hands of final consumers in the same way as the costs in the first stage.

The manufacturer in turn disposes of the cloth to the tailor for £16, who turns it into suits at a cost of £4. But the final costs of the suits are £16 plus £4 equals £20; and the total purchasing power in the hands of final consumers is £10 plus £6 plus £4, equals £20.¹

So far we have assumed that no saving has taken place; and at first glance it would appear that saving, by curtailing consumers' purchasing power, must force down the prices of final commodities, unless they are to remain unsold and glut the market. But saving in the economic sense is only a transference of purchasing power from one person to another, and, as Mr. Hobson rightly observes, the bulk of this transferred power is invested in capital goods.

It does not necessarily follow, however, that disequilibrium between consumers' purchasing power and final costs will result from saving. If consumers' purchasing

¹ For a diagrammatic refutation of the Douglas Theory the reader should consult Durbin: *Purchasing Power and the Trade Depression*.

power is curtailed, costs of production are also reduced by improved methods due to an increased supply of capital, and for the same reason interest charges are lowered.

But in an actual society the rate of saving and the rate of interest paid for it are not constant: the rate of saving continually changes, and a sudden increase in the rate of saving will force down the prices of commodities more quickly than it forces down costs. The reason for this is that an increase in saving affects the prices of commodities at once, but the effects of an increase in the rate of investment are felt only slowly. Equilibrium, therefore, can only be restored by reducing costs in the form of a fall in the rate of interest.

It is true, of course, that a progressive fall in the rate of interest must restore equilibrium in the long run, but the under-consumption theorists deny this over a short period on the ground that the rate of interest changes much more slowly than the situation demands, and that in any case the immediate results of a fall in the rate of interest on the cost of producing consumption goods is only slight, as in the short period only the hire of new capital is affected.

SAVINGS AND INVESTMENT THEORY.—The savings-investment theory of the trade cycle is always associated with Mr. Keynes. The substance of the theory is briefly as follows:—For the economic system to be in equilibrium, the rate of saving must be equal to the rate of investment in new capital goods. When the rate of investment in new capital goods is greater than the rate of saving, a trade boom begins; on the other hand, when the rate of saving is greater than the rate of investment, a trade depression follows.

These two changing terms are difficult to keep in equality because while saving tends to increase at a roughly uniform rate over a moderate period, the rate of investment tends to fluctuate fairly widely.

If, starting from an equilibrium position, investment begins to exceed savings, the capital goods industries expand and increased payments are made for the hires of factors of production. That, in turn, will increase the demand for final commodities the supply of which cannot be increased for some time, and their prices rise. As surplus profits are made by the sellers a stimulus is given to further investment, and the circle of new investment gradually widens. A general rise of profits, however, is followed by a rising wage-level, and a further impetus is given to the rise in prices of consumption goods.

This up-swing cannot continue indefinitely, for beyond a certain point costs of production begin to rise. That applies not only to wages, and raw materials, but to the rate of interest charged on bank loans, and much of the new investment has been financed by bank credits. Sooner or later, therefore, a position is reached at which an increased output of consumption goods cannot be sold at prices which cover their costs.

At this stage a crisis, followed by a down-swing, begins. The rate of new investment slows down as the expectations of profit lessens; the price-level falls, partly because of the greater supply of final commodities due to the new investment, and partly because as the rate of new investment slackens, the earnings of factors of production diminish. Once the price-level begins to fall, people accumulate money balances and a vicious circle of falling prices is started.

MONETARY THEORY.—The term monetary theory is rather elastic, but it is usually applied to the Hawtrey theory which has already been noted in another connection. The substance of the monetary theory is briefly this:—An increase in demand for goods causes traders to increase their stocks of goods, which they finance by means of short-term loans from the banks. This new money is paid by the middlemen to the producers, and the incomes of the

factors of production begin to rise. The result is a further increase in the demand for consumers' goods, and another circle of expansion begins. After this process has continued for some time costs of production and prices begin to rise, but rising prices will not check the boom so long as the banks continue to finance the middlemen on the old terms, as rising prices increases the value of the stocks held by the traders.

The slump begins when the Central Bank decides that it is necessary to restrict credit by raising the rate of interest. In the first instance the down-swing commences with the middlemen who, faced with higher interest rates, reduce their stocks by curtailing their orders to the producers. Business activity slackens; incomes and prices fall. But falling prices cause traders to still further reduce their stocks, so that the process of contraction, once started, becomes cumulative.

DR. HAYEK'S THEORY.—A trade cycle of a different type from the above is that of Dr. Hayek. This theory, which is very intricate and profound, amounts briefly to this. Goods pass through many intermediary stages before reaching the final consumer, and in a rich country the productive stream is long, while in a poor country it is short. Now when accumulated capital is invested, new intermediary stages are introduced into the stream of production, which is thus lengthened; but if too much capital is used for lengthening the productive process and too little for current consumption, dislocation of the industrial machine follows.

Let us suppose that the public decides to restrict its demand for consumption goods; the demand for producers' goods for the final stage of the productive process declines; hence resources are deflected to the earlier stages and the stream is lengthened.¹ Now so long as the saving is

¹ More processes are specialised, in some cases by separate firms, but more usually by an increase of specialised plant within a firm.

voluntary the procedure can work smoothly; there is a steady flow of savings into industry, though adjustment does not take place so much by actual movements of invested resources, as by their deflection into other channels.

But exactly the same results can be achieved by a credit expansion by the banks which lowers the rate of interest below what it would have been had only capital saved from current income come upon the market. The vital difference is this. Prices begin to rise, partly because as voluntary saving has not taken place the demand for consumers' goods has not been reduced; and partly because the new bank money is used to attract away resources previously used in making goods for final consumption.

After a period of apparent prosperity, reaction sets in. The money created by bank credits gradually becomes income in the hands of labourers who have been hired away from the final stages of production, and the demand for consumption goods increases. This, in turn, causes resources to be drawn forwards from the early to the later stages of production, and some of these early stages become unprofitable and are abandoned.¹ In this way a crisis is

¹ By this time the banks, alarmed for their safety, will have raised the rate of interest at least to, if not above, the natural level. We have already seen that opinions differ as to the effect on prices of changes in the rate of interest over a short period. But it seems reasonable to suppose that the effects will be more marked where the banks have been lending more cheaply than the amount of real savings warrants, than in the case of a fall of the rate due to the fact that the supply of real capital has increased. It should be noted, too, that the productive resources in the early stages consist of specific and non-specific resources, or perhaps more accurately, less specific resources. It is the less specific resources that are attracted away by the rise of profits in the production of final commodities; or, to put the matter in another way, it is the less specific resources that are forced out of the early stages by the rise in the rate of interest. Specific factors cannot shift because they have no alternative employment, and they cannot work except in conjunction with the non-, or less, specific factors. The result is that they are left unemployed. For a detailed exposition the reader should consult Hayek: *Prices and Production*.

caused and a depression begins. It could only be averted if the new processes were completed by the time the extra money had become income in the hands of final consumers and used for the purchase of consumers' goods, for in these circumstances an increased flow of goods would balance the new demand.

In practice, however, this does not take place, because the extra money becomes income used to purchase final commodities before the new additional processes are completed and are turning out goods ready for final consumption.

It will be noticed that Dr. Hayek's theory ends at a point that is diametrically opposed to the conclusions of the under-consumption theorists, for it is evident, even on the above inadequate exposition, that the granting of consumers' credits would only make the situation worse. In some cases, producers' credits might bring a temporary benefit, but once a crisis due to a rate of interest below the natural rate begins, artificial means are not a true remedy; on the other hand they probably only delay the natural adjustment between production and consumption.

Every theory of the trade cycle bristles with problems over which opinions differ more sharply than over any other phase of contemporary Economics. Dr. Hayek's starting-point (so emphasised by writers like Wicksteed and Davenport) is that, where productive resources are limited in quantity, an expansion of production in one direction must mean a curtailment in another. It follows from this, of course, that the output of capital goods and the output of final commodities cannot increase at the same time. On this hypothesis it is also clear that an increase of demand for final commodities is not an increase of demand in a real ultimate sense for capital goods.

At first glance this seems a contradiction opposed to common sense and experience. If the demand for consumers' goods increases, the production of them must

become more profitable, so that it would appear that there must be an increase of real demand for capital goods. This is, of course, true on the surface, but it is not a real increase of demand in the sense of leading to a possible increase of real output except at the cost of contracting the real output of consumers' goods.

In a monetary economy the result may not be apparent in the short period because the supply of money can be changed through the credit policy of the banks, and it is the effects of movements of factors of production caused by changes in the supply of money, rather than the movements themselves, that are visible to the observer. In a non-monetary economy, where real savings were directly used, the effect of increasing one aspect of production with a fixed supply of resources would be seen immediately.

Dr. Hayek's position, like the general theory of alternative costs, will present difficulties to many readers. It will be noticed that it is assumed that all productive resources are fully employed. Incidentally this applies to the theory of alternative costs generally. Obviously the attainment of one end does not involve the sacrifice of another if the individual has unused surplus income.

Now if we take a broad view and think in terms of the long period, the principle of alternative costs is undoubtedly valid and Dr. Hayek's argument is perfectly true. In the short period, exceptions can arise. This is clear in the case of the individual, and it is probably not less true in the case of the capital resources of production. Where there are unused surplus resources, the output of capital goods and the output of final commodities can expand together.

It is by no means a simple matter to determine *a priori* when there are surplus capital resources in the industries producing capital goods and in those producing final commodities, so that both can expand without attracting resources from the other. If we think of a trade boom as

an expansion starting from a state of equilibrium, it seems reasonable to suppose that all capital resources will be employed. On the other hand, equilibrium in the concrete world is only very approximate, so that a loophole is left for the existence of capital resources not fully employed.

This objection to Dr. Hayek's theory is not a very serious one. As soon as we pass from pure equilibrium to the world of dynamic changes, probably no theory can be made logically watertight with respect to every particular case.

27. The Control of the Trade Cycle

Much attention has been given to this problem in recent years. It has been argued by many authorities that the trade cycle can be controlled by a suitable monetary policy. Mr. Hawtrey, for example, is of the opinion that if the rate of interest is manipulated at the proper time fluctuations can be confined within narrow limits.

There are, however, differences of opinion as to the objective of credit control. Many writers favour a suitable stabilisation of the price-level. Against this it is argued that the price-level is a vague concept, and that index numbers are to some extent arbitrary. Another difficulty is that in a period of rapid technical progress when costs are falling, a stable price-level would have the same inflationary effects as a credit expansion when costs remain constant. For that reason some authorities favour neutral money. Neutral money does not mean a money absolutely constant in amount, but it does mean that the quantity of money would vary much less than in the case of stable money.

Even when the objective of control is settled there are difficulties in the way of carrying a policy into practice. In the first place the Central Bank must have absolute control of currency and credit, and as has already been noted, that is not the case at present. The Central Bank would require to determine the ratio of loans to cash

reserves kept by the commercial banks, and to vary that ratio in accordance with the needs of its monetary policy. Another difficulty that has often been pointed out is that the Central Bank can only control the quantity of cash; it has little or no control over the velocity of its circulation; yet the velocity of circulation plays as important a part in price changes as the quantity of money.

Once a depression has set in it can be ended by a policy of cheap money, but only in the long run. In the short period the rate of interest may have little effect on business activity because in many cases, in periods of depression, the demand for capital is relatively inelastic—a very low rate of interest will not induce entrepreneurs to embark on new enterprises if the expectations of profit are very slight. Mr. Keynes, and others, therefore, have suggested a revival of investment by means of a policy of public works.

The policy of public works is a wide and controversial subject. Those who support it argue that the distribution of public work should be so arranged as to be at a minimum in periods of prosperity, and at a maximum in the trough of a depression. In the past, an exactly opposite procedure was followed mainly because Public Authorities are able and willing to borrow in good times, and unwilling to increase their indebtedness in bad times. The result was that when public works were most needed they were not forthcoming, and that when they were put into operation, they conflicted with the interests of private enterprise.

The advocates of a public works policy do not necessarily propose to greatly increase the amount expended on public works over a period of years, but to distribute that expenditure more scientifically.

In a depression, the worst effects are felt in the constructional industries. It is therefore claimed that a policy of public works would not only awaken activity in these industries, but would spread that activity to the industries engaged in producing and transporting the raw

materials needed. As the circle of employment widened, the beneficial effects would be gradually extended to the industries producing consumers' goods. At that stage a further impetus would be given to the capital goods industries.

Against the objection of the expense entailed it is argued that the country is left with something tangible for its expenditure; and also that there are strong moral reasons against keeping a part of the population in idleness during a depression.

On the other side it is argued that a public works policy is more costly than unemployment benefit; that public borrowing tends to keep up interest rates, and thus increase the difficulties of private enterprise; and that the demand for labour is increased but little as resources are merely diverted from private industry to public enterprise. Against the latter argument it may be urged that in periods of depression there is no lack of unemployed resources.

A more weighty objection is that once resources have been transferred to public enterprise, it is extremely difficult to divert them back again into their normal channels. Lastly, it is argued that a public works policy tends to create a peculiar atmosphere of "catchwords" such as new credit policy, reconstruction, etc., that has an unfavourable influence on private enterprise.¹

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CHAPTER XIX

INTERNATIONAL TRADE

1. Differences between Home and Foreign Trade

The theory of trade within a market in which competition is active has been already considered. Mobility of capital and labour is never so absolute as was sometimes suggested by the classical economists, but the theory of the working of unrestricted competition leads to results which are near enough to the truth to provide a valuable picture of economic life. International trade appears at first sight to be governed by principles different from those observed in internal trade; more detailed study shows that the differences are of degree rather than of kind.

Demand and supply cannot work out their full effects where foreign trade is concerned. Those examples of economic friction which are always present even where competition is keenest attain an especial prominence where commodities must cross national boundaries. First, there is the physical obstacle to commerce: where ocean transport is carried on, it must overcome great difficulties; thus a far greater degree of inequality between conditions of production in different countries is necessary to stimulate commerce when the countries are widely separated than when they are adjoining; so the obstacles to trade between Lancashire and Yorkshire are much less than those between England and France. The natural difficulties may be increased by artificial barriers to trade, either through prohibitive laws, as in war-time, or through customs duties or protective tariffs.

There is a very serious obstacle to the migration of labour from country to country. Language differences are often

prohibitive, while feelings of patriotism help to keep men in their own country. For every man who will so change his habits as to go to work abroad, there are a hundred who will move from district to district within a country. Even though only a relatively small migration is needed to equalise the conditions in two countries, neighbouring states may persist for generations in standards of life which are markedly different. The amount of migration between France and England is, comparatively, very small. Canada exerts a far greater attractive force to British labour than does France, but conditions are not yet equalised. If the opportunities which Canada offers to British labourers were available at home, a great redistribution of economic activities would take place.

Mobility of capital is a less important factor, but demands consideration. Men who refuse to leave their own land may invest capital abroad, but a home investment is usually preferred to a foreign. A foreign loan must offer a much higher rate of interest than a home loan; not only is there a real risk of loss of interest and even capital, but an investor feels a sense of insecurity when money is invested abroad; even when a country is crying out for capital and is able to pay well for it, it cannot obtain it from (say) England as easily as can borrowers in this country. The want of capital is, however, no permanent obstacle to the development of a new country; sooner or later, capital is attracted.

Under present conditions a very serious obstacle to international trade is found in the differences in economic environment from country to country. English manufacturers have been slow to study foreign customs, and so opportunities of trade have been lost; the demands of English consumers may be accurately studied, but foreign demand is much more speculative. A more widely diffused knowledge would increase trade. A very important difference of this kind is found in the existence of national

weights and measures. There is a tendency to uniformity, but as long as differences exist, so long will a needless obstacle to trade be continued.

Currency differences are still more important. The English currency is quite different from continental money, and exchange is thereby hampered; if an English manufacturer wishes to sell goods in France he must know the value of the French money unit in English money. Again, a money which is acceptable in England may be almost useless in France: before the war an English sovereign was generally acceptable abroad, but token money, *i.e.* copper and silver coin, had no purchasing power at its face value. Even gold coins which were acceptable throughout Europe could not be used extensively in foreign trade: the bulkiness of metal and the cost of insurance were obstacles to the use of gold as an international medium of payment. There is no universal metallic money, and even if it existed, difficulties of transport would prevent its extensive use as payment medium.

But these differences, as we have already noted, are differences of degree, not differences of kind. It was at one time believed that a different principle of costs operated between home and foreign trade. Ricardo and his circle argued that whereas costs of production in home trade were proportional to the labour efforts involved, costs of production in foreign trade were comparative; but as we have shown elsewhere, this distinction cannot stand. All costs are comparative.

It is inherent in the principle of specialisation that an individual will naturally devote his energies to those pursuits for which he is best fitted, naturally or through training. A doctor, for example, may be able to do the necessary repairs to his motor-car more cheaply and more efficiently than the mechanics at a garage, but he does not do them for the very good reason that his time

and energy can be more profitably employed in attending to his patients. This fundamental principle, which permeates the whole of the phases of life, applies in exactly the same way, and with precisely the same force, to international trade between countries, as it does to industrial relations at home. It is true that, in practice, obstacles can be, and in fact are, placed on the free working of this principle, but that is only an accidental circumstance. A distinctive term for costs in international trade is therefore unnecessary.

2. The Purpose and Origin of Foreign Trade

Foreign trade arises from two reasons. In the first place, human needs (natural and acquired) and natural resources. This is specially marked in the case of minerals—coal, copper, tin, and gold, for example—and products such as raw cotton, rice, and tea. Secondly, many commodities can be produced more cheaply in some places than in others. Certain commodities like coal and iron-ore are costly to transport from one place to another; iron and steel products, therefore, can only be manufactured cheaply in the coal areas, or where transport costs are very low. Low transport costs are also a vital factor in the distribution of these products. Sheep rearing is profitable on a large scale only when land is cheap and abundant; Australia, therefore, has a natural advantage in the production of raw wool. Fine cotton can only be spun without artificial aid in a damp climate, and these examples can be multiplied indefinitely.

In these days, international trade is not necessarily confined to the acquisition of products by countries which cannot be produced at home. If country *A* and country *B* both produce manufactured woollen and cotton goods, and if *A* can manufacture woollen, as well as cotton, goods more cheaply than *B*, it may yet be more profitable for *A* to specialise in cottons and to purchase its woollen

goods from *B* because of some special advantages which it enjoys in the manufacture of that class of goods.

It must always be remembered that no country has an unlimited supply of productive resources; its relatively scarce resources, therefore, can only be used to the maximum advantage when they are employed in the most productive channels.

3. The Theory of Comparative Costs

The theory of comparative costs was applied to the theory of international trade in the first-place by Ricardo.

The following arithmetical examples (the figures are illustrative only) should make the Ricardian theory of international trade perfectly clear. Let us assume that there are no restrictions on trade between *A* and *B*, and that *A* can produce woollen cloth at 2s. per yard, and cotton cloth at 1s. per yard, while *B* can only produce woollens and cottons (equal quality is assumed) at 3s. and 1s. 6d. a yard respectively.

It will be noticed that, although *A* can produce both classes of goods more cheaply than *B*, the comparative costs are yet equal, so that trade between *A* and *B*, if woollens and cottons are the only goods that enter into international trade between these countries, cannot be permanent. *A*, with its lower expenses of production, would export both classes of goods to *B*, until as a result of the transfer of money or relative changes in the supply of these goods in both countries, prices rise in *A* and fall in *B* up to the point at which the expenses of production of both goods are the same in each country.

As soon as this point has been reached there is no motive for further trade.

If, however, in the first instance, comparative costs are not equal, permanent trade will be possible. Suppose that *A* as before produces woollen cloth at 2s. per yard, and

cotton cloth at 1s. per yard, while in *B* the same goods cost to produce 2s. 6d. and 1s. 9d. per yard respectively.

The comparative costs now differ, and as *A* has an advantage in the production of both commodities, it will export, as before, woollens and cottons to *B*. But again, this flow of goods will be followed by changes in price levels. Suppose, for simplicity, that the final result is a rise of 3d. per yard in the price of both cloths in *A*, and a corresponding fall in *B*, the cost of production of woollens in either country will be the same, but *A* will have an advantage of 3d. per yard in the manufacture of cottons. This country will therefore concentrate on the production of cotton cloth, and trade between *A* and *B* will become permanent as *B* will gradually curtail its manufacture of cottons and rely on *A* for its supplies.

This, of course, is not the only hypothesis. International trade need not be confined to these two commodities, and the final result may be that *A* has a comparative advantage with respect to woollen as well as cotton goods. But if *A*'s comparative advantage with respect to cotton goods is in the ratio of 3 : 1, while its advantage in woollens is only as 2 : 1, it is obviously more profitable to import its woollen goods from *B*, and to divert extra resources into the cotton export trade.

But while the Ricardian theory that trade between two countries can only be permanent so long as there exists differences in the comparative costs of production of the commodities concerned is perfectly true, his exposition was incomplete at several points. Comparative costs only decide which articles can enter into international trade: they do not determine the terms of exchange. If *A* specialises in cotton goods because its comparative advantage is greatest in that commodity, and *B* in woollens, both will trade with advantage, but on what principle is the gain within the limits set by comparative costs divided? Obviously on the rate of exchange between the

two commodities, assuming direct barter to present the problem in its simplest form. But what determines the rate of exchange? The answer given by the early Ricardians, following Adam Smith, was the "higgling" of the market, but this is too indeterminate for modern analysis. The ratio of exchange is determined by the elasticities of the demand of each country for the products of the other. If *A*'s demand for woollens is much more intense than *B*'s demand for cottons, *B* will reap an advantage inversely proportional to the intensity of *A*'s demand, for *A* will gradually increase its offers of cottons for woollens up to a point set by the cost of manufacturing the goods itself.

Another weakness in the Ricardian exposition, apart from the fact that its comparative costs were measured in terms of labour effort, is the fact that an increase of output due to international specialisation is not necessarily followed by constant costs. If the greater scale of production reduces costs per unit, the comparative advantage will be increased; on the other hand, if the increased output can only be obtained at an increased cost per unit, the comparative advantage will be diminished, and in some cases even disappear.

To bring the Ricardian analysis into line with the modern theory of value, it is necessary to bear in mind that if the comparative costs of production differ between two countries this indicates that there is a difference in the relative scarcities of the factors of production in the two places. The natural result is that each country will specialise in the production of goods for the manufacture of which it has productive resources relatively ample; on the other hand, the production of goods that require a large proportion of factors which are relatively scarce will be curtailed.

This is a point of very great importance with respect to international specialisation. For a given output it

may be profitable to specialise in the production of a particular commodity, but for a different output, either greater or smaller, this may not be the case, as diminishing returns may set in. A change in demand, which leads in turn to a change of output, may make it profitable to divert productive resources to the production of a commodity which was not the most profitable under the first conditions.

It follows, therefore, that in certain circumstances, it may be an advantage to devote a greater proportion of resources to production for the home market, and to diminish the production of a particular commodity for export abroad.

The benefits of international trade are beyond dispute, though periodically, especially in times of abnormal unemployment, they have been called in question. It follows from the preceding paragraph that international trade tends to smooth away the relative scarcity both of raw products and productive factors, by making resources relatively more plentiful in some places and relatively scarcer in others, that is to say, reversing the natural tendencies. As a matter of fact each commodity is produced by a combination of productive resources, and usually the proportions of the factors of a combination can be varied considerably, and will be varied from place to place according as this or that factor is relatively more scarce. It follows, therefore, that, when no restrictions are placed in the way of international trade, goods will tend to be produced in places where it is possible to combine resources in such a way that the scarcity principle is at a minimum, not only for the country in question but for the world as a whole. In other words, competition will so distribute the production of commodities that each will be produced at a place of minimum costs.

In less technical language, international trade allows a country to obtain a desired combination of consumption

goods at a much less expenditure of resources than would be the case if all these goods were produced at home. Time and other resources expended in one direction are not available for alternative ends; hence, so long as movement is free, the natural tendency is to use them to the maximum economic advantage. If, therefore, an industry has become localised naturally in a particular place it is because, in this specific area, the industry in question offers greater economic advantage than any other. With the scientific resources now at our disposal there is probably no form of production, with the exception of the mining of certain minerals, that could not be carried on in this and in other countries; but in many instances such procedure would be a gross waste of resources, and any argument in favour of planting an industry in a particular place by artificial means rests on political, not on economic grounds. In controversies, however, the two issues are often confused.

4. The Real Nature of Comparative Costs

The term costs has so many meanings that confusion may easily arise. It may appear at first glance that the term cost as used in the preceding section refers to money costs, for it is self-evident that the actual money cost of producing a commodity must be lower in a country that exports it than in a country that imports it, as otherwise the good would not be imported.

It is perfectly true, of course, that the flow of international trade is determined directly by the actual differences in money costs of production in different places, but money costs merely reflect the exchange relations between goods that lie behind them. To some extent, at any rate, money costs are a result of international trade, for in most countries money costs would be somewhat different if international trade were impossible.

For Ricardo, the real costs behind the money costs were labour costs, but his theory was only rigidly true on the assumption of a single factor of production, homogeneous labour. In reality, any country has a large number of factors of different kinds and grades, some of which are specific, or highly specialised, and others are non-specific, or general, and the whole of these factors must be taken into account by any realistic theory.

The costs that determine exchange relations are relative, or opportunity costs. These costs arise because the resources of any country are always scarce in relation to their possible uses; choice, therefore, determines the uses to which these scarce resources are put. If a country decides to utilise the whole of its resources in the production of commodity *A*, clearly, it cannot produce any units of commodity *B*. If, now, it wishes to produce a unit of *B*, as well as commodity *A*, it can do so only by sacrificing one or more units of *A*.

If we next suppose that, in order to obtain a unit of *B*, the country must sacrifice 3 units of *A*, we have a ratio between the commodities *A* and *B* which we can term a comparative cost ratio, an opportunity cost ratio, or a substitution ratio, as we please, for clearly, when a country decides to produce more of one commodity and less of another, it is simply substituting one commodity for the other.

For reasons that have been noted already, these substitution ratios are likely to differ from country to country, and it is these differences that make international trade profitable. If a country has to sacrifice 3 units of *A* in order to produce a unit of *B*, and if it can acquire a unit of *B* from some country with a different substitution ratio by offering in exchange less than 3 units of *A* (neglecting costs of transport), it will be profitable to produce *A* only, and to acquire *B* by exchange. Similar reasoning will apply to the other party to the exchange, as unless the substitution

ratios are such that both parties can exchange with advantage, exchange will not take place.

Substitution ratios not only differ between countries, but they do not necessarily remain constant in any one country. Changes in output may be accompanied by increasing or diminishing returns. If at certain output diminishing returns set in with respect to the production of commodity *A*, it will be profitable to restrict the output of *A* and produce a little of *B* instead of acquiring it by exchange.

We have considered the question of opportunity cost, or substitution ratios between two commodities only, but the argument can easily be extended to a number of commodities.

5. Foreign Trade a Form of Barter

Foreign trade has often been described as a form of barter, and during the early stages of its evolution this was undoubtedly the case, though the same may be said of trade between neighbouring individuals. Actual barter, however, persisted much longer in foreign trade for obvious reasons, and even to-day, in very abnormal circumstances, the goods of one country may be exchanged directly against the goods of another.

But this is an exceptional case. Normally trade between individuals of different countries is conducted on the same principles as between citizens of the same country, that is, by means of some medium of exchange, or, in other words, through the use of money; and the use of money brings complications into international trade that would not arise under a system of pure barter.

Different countries use different forms of currency and units of account; hence international business transactions must take into consideration the rates of exchange between the currencies of the countries concerned. If international trade were pure direct barter, a reduction of imports would

be followed immediately by a reduction of exports, because each individual barter would be a direct transaction. Under a system of monetary exchange this does not necessarily follow over a short period, because, while each exchange is still individual and separate, it is of an indirect nature. This means that the exporters in country *A* to country *B* are not the same people as the importers in country *A* from country *B*; hence if country *B* restricts its imports from country *A*, its exports to country *A* may not immediately show a corresponding decrease, though in the long run they must.

Foreign trade under a money economy also differs from pure barter in the fact that relative values change more quickly, and that the quantity of imports which a country can obtain for a given quantity of exports is liable to be affected by movements of international credit.

6. How International Indebtedness Arises

Between any two countries, and in fact between any one country and the rest of the world, there is a constant inflow and outflow of goods and services; hence there arises between the different countries of the world a huge mass of mutual indebtedness. It must be remembered that when we speak of indebtedness between countries what we really mean is indebtedness between the individuals of the respective countries.

Some of these claims between two countries may cancel each other, but in the normal course of events there will arise a balance in favour of the citizens of country *A* against the citizens of country *B*. These claims may be of various kinds. *A* may have exported goods to *B* for which it demands immediate payment; on the other hand, *A* may have made a loan to *B*, that is to say, *A* may have exported goods to *B* on agreement not to enforce payment for a period of years, and in such a case *A*'s claims on *B* would represent interest on capital, guaranteed by documents known as long-dated securities.

Claims to interest can also arise in a second way. *A* may have exported goods to *B*, and, instead of requiring immediate payment, may have allowed the credits to build up a balance which could be called in when required. Interest on balances of this kind is guaranteed by short-dated securities.

But whatever the nature of these claims, they can only be settled in one of the following ways. *B* must either obtain command of the necessary quantity of *A*'s currency, or send gold, or raise a loan in *A*, or reduce its imports and increase its exports.

7. Foreign Trade Necessitates Reciprocal Trade

All trade implies reciprocal relations, but this very obvious truth is often neglected in discussions on foreign trade, particularly when the trade returns of a country in which unemployment is rife show an excess of imports over exports.

Now a little reflection will show that it is neither desirable nor possible to sell without buying even in the case of neighbouring individuals in the same country. Selling without buying is obviously fruitless, because selling is only a means to an end. On a final analysis an individual makes a sale only for the purpose of acquiring some commodity which occupies a relatively higher place on his scale of preferences. It does not follow that the sale will always be immediately followed by a purchase; indeed a number of sales may have to be effected before an expensive commodity can be acquired, but this does not affect the argument.

In the case of pure barter the fact that a sale implies a purchase is self-evident, but it is equally true under a money economy, though more than two parties may be involved.

Suppose, for example, that Smith, Brown, Jones, and Robinson each make and wish to exchange £1 worth of

goods, and further suppose that the circumstances are such that each can only buy from one and sell to a different individual. To make the matter clearer, let us assume that Brown wants Smith's goods only; that similarly Jones will only buy from Brown, and Robinson from Jones.

Now Robinson can only sell his goods to Smith, but suppose that Smith will sell to Brown but refuses to buy from Robinson, what must follow? Clearly, Robinson cannot buy from Jones, nor Jones from Brown, nor Brown from Smith; in other words, Smith cannot effect a sale without making a purchase.

This highly simplified example makes assumptions that need considerable modification when applied to concrete cases, but in the long run the conclusion is perfectly sound; and what applies to a group of neighbouring individuals applies with equal force to trade between two countries. If we restrict our imports from abroad, our exports must also decline, although time may be required to produce the full effects. No country can sell abroad and refuse to buy, because, however complicated the course of international trade may be, sooner or later a point must be reached at which the non-importing country finds itself in the position of Smith in the example above.¹

8. The Balance of Trade, and the Balance of Payments

These terms are sometimes confused, so it is very necessary to keep the distinction clearly in mind. The balance of trade refers merely to the exports and imports of visible commodities during a year, and the exports and imports of commodities need never balance. It is often supposed that an excess of visible exports over visible imports, the so-called favourable balance of trade, is an advantage, and that an excess of imports over visible exports, the so-called

¹ This does not mean that in every case imports must be paid for by an export of goods. Other ways of paying for imports are given in another section.

unfavourable balance of trade, is a sign of approaching national disaster, but such ideas are mistaken. England had a steadily growing unfavourable trade balance for many years at a time when the national wealth was increasing by leaps and bounds. What must balance over a period of time is the total indebtedness, and the balance of payments includes items that either are not shown at all, or else are shown only incompletely in the Customs Returns. These items are known as invisible exports.

Under this heading fall such international services as shipping. The proportion of the overseas carrying trade done in English ships is very large, and it must not be overlooked that, in addition to carrying goods from British ports and return cargoes from abroad, our steamers do a large transit trade between foreign countries. These services must be paid for, and as they are ultimately paid for in goods, our customs returns show an apparent excess of imports, which in value correspond with the value of the shipping services rendered.

But this is only one of the many types of invisible English exports. London is the headquarters of the world's business in marine and fire insurance, and very considerable sums earned in this way must be set against our apparent adverse trade balance. To this item may also be added the commissions earned by the various agencies for financing international trade, those of the accepting houses, for example.

The most important individual item of international indebtedness arises out of foreign loans. During the nineteenth century the South American republics, the United States, and the British Colonies and Dependencies were developed by means of English capital exported abroad. When a foreign or colonial loan is raised in London it is, in many cases, raised for the purpose of payment for goods already on order. The bulk of the money, therefore, remains in the country, and the loan is

really effected by a transfer of goods which swell the English export returns for the time being. In future years, however, interest will have to be paid on the loan, and on the expiry of some agreed term, the capital as well, either in a single payment, or more usually, by a series of instalments.¹

This interest and capital could of course be paid in gold, but for obvious reasons this seldom takes place. Payments are usually made by a transfer of claims to English currency arising out of exports from the debtor country to England. An Argentine cultivator might send corn to England, receiving a bill of exchange in payment. This bill he could send in payment of interest on his own debt, or sell it to someone else who had payments to make to someone in England. Thus the interest on the money loaned would be paid, in effect, not by a transfer of gold but by an export of corn. The corn would appear in the English customs lists, but would not be balanced by any material export from England to the Argentine.

The total number of items that may enter into the balance of payments is large, and includes, in addition to the items noted above, tourist expenditures, remittances other than interest from abroad, gold and silver bullion, short-term investments, etc. All the items other than visible commodities are not necessarily credit items. English tourists may spend more abroad than foreign tourists spend in this country; short-term balances move in and out of the country, and so on. But the important point to notice is that it is the balance of payments that must balance in the long run, and not the visible exports and imports.

¹ In the last complete pre-war year, 1913, the visible adverse trade balance was approximately £137,000,000. Against this, however, our interest on foreign investments was about £210,000,000; earnings of British shipping, £94,000,000; and profits from financial services came to £25,000,000.

But while the total exports and imports of any country must balance in the long run, this does not mean that such must be the case between any particular pair of countries, for the circle of exchange is world-wide. Any country may permanently import from another a much greater value of goods than it exports to that place. In such a case, however, the country in question must have an excess of exports over imports of a corresponding value with respect to a third country, or, as is more likely to be the case in reality, with the rest of the world as a whole.

ESTIMATED BALANCE OF PAYMENTS FOR 1938
EXCLUDING LENDING AND REPAYMENT OF CAPITAL

Excess of Imports of Goods, Gold, and Silver Bullion				£390 millions
Estimated net National Shipping Income	..	..	100	„
Net Income from Overseas Investments	..	..	200	„
Net Receipts from Commissions, etc.	..	..	35	„
Net Receipts from other Sources	..	..	—	„
				<u>£335</u>
Estimated Total Credit Balance	..	..	..	— £55 „

BALANCE OF PAYMENTS

1927	'28	'29	'30	'31	'32	'33
+ £114 m.	+ £137 m.	+ £138 m.	+ £39 m.	— £104 m.	— £56 m.	— £4 m.
'34	'35	'36	'37	'38		
— £7 m.	+ £32 m.	— £18 m.	— £56 m.	— £55 m.		

Many of the items in the balance of payments are approximate estimates only, being based often on insufficient data. It is clearly impossible to keep an exact account of all tourist expenditures, and even of all capital transactions. Goods are not always correctly valued; and in some cases the payments for the goods are not made in the year that the exports or imports take place. The balance sheet, therefore, is liable to a margin of error, more or less large.

9. Changes in the Items of the Balance of Payments

A fall in the prices of English goods will tend to increase our exports for two reasons. As the foreign demand for our goods is usually elastic, any particular country will tend to buy more from us than before. Secondly, it may buy from us in preference to elsewhere because the fall in prices may render our goods cheaper than those in rival markets. The same result will happen if our currency depreciates on the foreign exchange market. Our goods valued in terms of foreign money thus become cheaper, and a stimulus is given to our exports.

Conversely, a rise in sterling prices will increase our imports, as England will become a better market in which to sell. A rise in the value of our currency abroad will tend to have a similar effect.

A rise in the prices of foreign goods, and a rise in incomes abroad would favour our exports; a rise in incomes in this country would probably increase the demand for foreign goods.

In these days, the size of the visible export and import items is greatly affected by the various restrictions, tariffs, quotas, etc., imposed by Governments. Restrictions imposed by England will tend to limit our imports; restrictions imposed by foreign Governments will tend to limit our exports. The export items can be increased by means of subsidies. A tax levied on, say, coal used for domestic purposes, and the proceeds applied to subsidise coal for export, would allow the export prices of coal to be reduced and exports would probably increase.

Considerations similar to the above apply to the export of services. The foreign demand for our shipping services will depend on the prices of those services compared relatively with the prices charged by our competitors. The demand for our shipping services also depends on the state of world trade, and the tariff policies of Governments.

Every measure that restricts the volume of international trade reduces the demand for our shipping services.

The relation between international trade and international lending is very direct and important, and any reduction in the volume of long-term international investment has serious world-wide consequences.

Capital flows from industrially developed to industrially undeveloped countries. A large part of any loan made to a borrowing country is expended in the purchase of capital goods from the lending country, and these capital goods industries, in their turn, increase their demand for the raw materials of the borrowing country. Even if the loan is expended, not among the industries of the lending country, but among those of a third country, the final result will not differ greatly; the export trades of the lending country will still be stimulated, but in a more indirect way, though possibly not to the same extent.

In a broad sense, therefore, we can say that every foreign loan has a favourable effect on the export trade of the lending country.

The net amount lent abroad by any country during a given period depends on several factors.

In the first place the total amount that can be lent over any period depends on the excess of total national income over total national expenditure, or in other words, on the surplus available for investment, and the proportion of this fund that will be invested abroad will be determined mainly by the relations between the long-term rates of interest at home and abroad. Other things being equal, a rise in the rate of interest abroad, or a fall in the rate of interest at home, especially if the change is expected to be more or less permanent, will induce capitalists to invest abroad rather than at home.

A second factor, for all foreign investment is not made in gilt-edged securities, is the relative prospects of profits in industrial concerns abroad, and at home. The expectations

of higher profits in industrial concerns abroad, compared with those expected from businesses at home, will increase the attractiveness of foreign investments and lead to a flow of capital overseas.

The volume of short-term investment abroad depends on relative short-term interest rates at home and abroad, and in these days on the international political situation. Any political tension within a country drives short-term funds into safer quarters. Exchange speculation was a frequent cause of movements of short-term funds in the early post-War years, but, as we shall see later, the scope for it has now been greatly restricted by the foreign exchange restrictions now in vogue in many countries.

The size of the net interest item in the balance of payments is related to the factors discussed above. It depends in the first place on the amount of capital that has been lent abroad in past years. It also depends on the nature of these foreign investments—whether they have been made at fixed rates of interest, or whether the returns depend on the profits made by industrial concerns. Where the interest is paid, in the first instance, in foreign money, the amount actually received in the currency of the lending country is affected by the ruling rates of exchange.

Changes in the size of any item in the balance of payments means that adjustments must be made in one or more of the remaining items if equilibrium is to be preserved.

10. The Correction of an Adverse Balance of Payments

If England has a net favourable balance of payments no correction is necessary; the account will balance because the surplus will be invested at home or abroad. If England has a net unfavourable balance of payments the account can still be made to balance on paper by entering the deficit as an increase in the short-term sterling balances held by foreign banks, just as the account of a business man

who had made a loss on the year's trading could be made to balance by increasing the amount of his overdraft.

In a certain sense, the balance of payments will always balance, but it is a bookkeeping balance only. A businessman cannot offset his losses indefinitely simply by increasing the size of his overdraft without falling into serious difficulties, and the same considerations apply to a country. As soon as the balance of payments becomes adverse steps must be taken to increase the credit side, or to reduce the debit side of the account; in other words, either total imports must be restricted, or total exports must be increased. In practice, both objectives would be attempted.

The methods adopted would vary somewhat with the standard of the currency in use, and the social and political conditions of the country. Clearly, exports would be stimulated, and imports discouraged if prices, including incomes and wages, were allowed to fall; this deflation could be achieved by a contraction of credit, or, under a gold standard, by an export of gold. An alternative method would be to restrict imports directly by means of tariffs and quotas. This method has the advantage that imports are reduced by a rise in the cost of living; wages and incomes are not affected directly. But the method is not without drawbacks. A rise in the cost of living is as likely to cause labour discontent as cuts in wages; and in the long run, a reduction of imports through tariffs is likely to be followed by a reduction of exports. Imports can also be restricted by means of the various systems of foreign exchange control now practised in Central Europe, but in the long run, foreign exchange restrictions, like tariffs and quotas, tend to bring the balance of payments into equilibrium at a lower volume of international business. A method that may be valid as a short-period emergency measure may have grave long-period consequences, and experience proves that restrictions of this kind are more easily imposed than removed.

In some cases, as has been noted already, some exports may be stimulated by subsidies raised by taxing that part of the production used for domestic purposes.

If the country were on the gold standard the deficit could be corrected by devaluing the currency, that is to say, by reducing the gold equivalent of the unit of currency. In that way rising prices at home would check imports, and the depreciation of the currency abroad would assist exports. Devaluation, however, would have drawbacks if the country had large foreign investments, and apart from that, confidence in the currency would be shaken.

When a country is on an independent currency standard the simplest method is to allow the currency to depreciate abroad. The relative fall in the value of the currency on the foreign exchange market would indirectly lower the prices of export goods and raise the prices of import goods, and the balance of payments would be brought to equilibrium. To appreciate this matter, however, it is necessary to examine the working of the foreign exchange market.

11. The Foreign Exchanges

The constant necessity of making payments between the citizens of different countries creates the problem of the foreign exchanges, as merchants in one country are always under the necessity of obtaining claims on the currency of some other country; and this, in turn, gives rise to what is known as the rates of exchange between different currencies.

Questions of exchange rates fall within two broad classes according as the countries concerned are on the gold standard or not, and for the sake of convenience we shall consider exchange on the gold standard first.

THE GOLD STANDARD.—Countries on the gold standard can have, as legal tender and money of account, gold coins of the same weight and fineness, or entirely

different currencies; and at first glance it might be supposed that in the former case no problem of exchange rates could arise. That, however, is not so, because if the currencies of *A* and *B*, two hypothetical countries, were identical in every respect, a merchant in *A* could only settle a debt in country *B* by a transfer of gold plus the cost of transport, and this is an item of importance, because the risks of loss are great and involve corresponding charges for insurance.

To avoid this expense, therefore, the merchant would endeavour to purchase a negotiable instrument, a bill of exchange or a banker's draft, payable in *B*; and the price that he would have to pay for it would be governed, as in the case of ordinary commodities, by the supply of, and the demand for, these instruments, which would, in turn, be determined by the conditions of trade between the two countries. If *B* has exported more to *A* than *A* has to *B*, *A* must send more money to *B* than *B* must send to *A*; hence there will be a greater demand for *B*'s currency than for *A*'s. Our merchant in *A* will therefore have to pay a high price for a credit instrument payable in *B*, for *B*'s currency will be relatively more valuable; and the exchange will be in favour of *B*.

If we reverse the assumptions so that the balance of exports is in favour of *A*, there will be little demand for *B*'s currency in *A*, but as there will be a strong demand for *A*'s currency in *B*, *A*'s currency will become more valuable relatively to *B*'s, and exchange will be in favour of *A*. In this case our merchant will be able to buy a bill on easy terms.

The above case is the simplest possible because the units of currency in *A* and *B* are the same; but when a balance of indebtedness has to be settled between two countries using different gold currencies, the position is slightly more complicated.

MINT PAR OF EXCHANGE.—Where different coinage units are used by any two countries the normal rate of exchange is based upon the relative gold values of the coins in use as units of currency. Where two places have identical units as in the example above, there is, strictly speaking, no mint par of exchange at all, because the gold value of the unit in *A* is the same as the gold value of the unit in *B*.

When the gold sovereign was in circulation the amount of fine gold in the sovereign was equal to that in 25.22 francs. Thus the mint par between London and Paris was at the rate of £1 = 25.22 francs. French merchants were willing to receive English sovereigns at about this rate, for a sovereign was worth about 25.22 francs when melted down as bullion; in the same way an English merchant was ready to receive French gold at about this rate. There was a similar par of exchange between every pair of gold-using countries, provided that the amount of pure gold in the coins of each country was fixed and definite. In the case of two countries which had an identical coinage, as often (but not always) occurred in the case of a mother country and its colonies, the term "mint par" was meaningless, for transactions might be carried on indifferently on the basis of the coinage of either country.

No definite mint par of exchange existed between a gold- and a silver-using country; at any particular time the relation between the value of the sovereign and of a silver standard coin in another country might be accurately determined, but a mint par so obtained would be liable to variation. If the value of silver in terms of gold were constant, a true par could be obtained: it would only be necessary to estimate the value in gold of the amount of silver in the foreign coin, and the par thus calculated would not change so long as the weights of bullion in the respective coins were unaltered.

Still less is it possible to obtain a definite par of exchange between countries one or both of which have a paper standard. If a country has only a note issue, not based on a metallic reserve and not convertible, the amount of money in circulation will depend on the degree of restraint exercised by the issuing government; thus an inconvertible note issue is very liable to depreciation; this drop in the value of the standard money is recognisable in the rise of price of gold bullion, when prices are measured in the depreciated paper. Thus the temporary par of exchange between a gold- and a paper-using country can be obtained by estimating the amount of foreign paper money obtainable for the amount of gold in the coin of the home country. The gold in a sovereign would formerly have bought a certain number of Argentine notes, according to the price of bullion in that state. Such a par of exchange is liable to considerable fluctuation. The par between two paper-using countries is obtained by comparing the number of notes to be obtained for a definite weight of gold; suppose that England and France had only paper money, and that an ounce of gold cost £10 (in paper) in England, and 300 francs in France; the par of exchange would then be $\text{£}1 = 30 \text{ francs}$. The condition of the exchanges is often due largely to the fluctuations caused by variations in the note issues of various countries, though other important factors may also be present.

The mint par of exchange is only operative when the demand for the two currencies is equal, but that is seldom the case, for the balance of indebtedness between any two countries is constantly changing for various reasons. When England was on the gold standard the rate of exchange between London and Paris fluctuated in accordance with the demands for these currencies, and if England had imported more from France than she had expected, the franc rose in value relative to the sovereign because of the demand in England for French currency.

An English importer would therefore have to pay more than a sovereign for a credit instrument worth 25·22 francs, payable in Paris. On the other hand, if France had an excess of imports with respect to England, the position would be reversed and a French importer would be required to pay more than 25·22 francs for a sovereign payable in London.

In practice, exchange rates quotations can prove confusing because they can be expressed in two ways, that is, in terms of English, and in terms of foreign currency; but it is only because they are expressions of different points of view that they give apparently conflicting results. Any error, however, can be easily avoided by remembering that in comparing England and any other country, exchange has moved in our favour when the sovereign¹ buys more of the foreign currency than before, and that exchange has moved against us when the sovereign buys less.

This fundamental fact is not dependent on the gold standard, but is equally applicable to whatever form of currency may be used.

But under an effective gold standard there are limits to these fluctuations in the rates of exchange. These limits are fixed by the so-called gold points. If the rate of exchange against a country moves beyond a certain point, that is to say, if the value of sovereigns expressed in francs, for example, falls in normal circumstances to 25·15 francs, it will be cheaper to send gold to France instead of buying credit instruments.

If, on the other hand, we look at the matter from the side of Paris, and if we suppose the demand there for credit instruments payable in London be such that competition forces up the rate of exchange to 25·29 francs for the sovereign, this will be the point at which gold will move to London.

¹ More accurately, the £1 note in the years since 1914 that England has been on the gold standard.

It should be noticed that the gold points are relative positions only. The figures given above apply only to normal circumstances, if such circumstances can be defined. The actual points at any time are governed by the costs of freights, insurance rates, and the ease or difficulty of obtaining bullion, which varies a good deal from time to time. But in any event, under an effective international gold standard the cost of gold movements imposes definite limits on fluctuations in the rate of exchange between gold-using countries.

EXCHANGE UNDER INCONVERTIBLE PAPER STANDARDS.
—We have seen that under an international gold standard the rate of exchange depends normally on the comparative gold values of the currencies concerned; and that, though some variation is possible, it is limited in either direction by the cost of shipment of gold, so long as free gold movement is possible and circumstances are normal.

This leads us to the question of how the values of currencies are determined when they are no longer tied to gold.

Let us suppose free trade between England and Germany and that England uses inconvertible paper pounds, and Germany inconvertible paper marks; now what will determine the rate of exchange between pounds and marks?

If a ton of coal costs £2 in England and 8 marks in Germany, and if this commodity can be freely traded between the two countries, it is evident that the rate of exchange must settle at 4 marks to the pound, because if anyone could obtain 6 marks for the pound, it would pay anyone in Germany to spend 8 marks on a ton of coal, sell it for £2 in England and convert the £2 into 12 marks, thus making a profit, neglecting the expenses of transport for the moment, of 4 marks.

Suppose now, on the other hand, that the rate of exchange were two marks to the pound. It would then

advantage over competitors in ~~our~~ foreign markets. In short, as before, imports would be restricted and exports stimulated.

In the gold-receiving country or countries, on the other hand, the opposite conditions would prevail. The influx of gold would tend to raise prices there, and encourage imports and check exports. The exchange would thus gradually turn in favour of England, the gold lost would tend to be restored, and the exchanges would tend to return to their normal point of equilibrium.

It should be noticed that a relative rise in the rate of interest alone has an important influence on the adjustment of the rates of exchange. When the rate of interest in England is relatively higher than in other financial centres, capital, in whatever form, tends to be attracted here to earn the higher remuneration. A relative rise in the rate of interest will attract gold from abroad, and, up to a point, reverse a foreign drain. And it also affects the exchanges through credits. If England has an excess of imports from France, and the rate of interest is higher in London than Paris, many French exporters will not withdraw from England the proceeds of their sales, but will leave them as a credit balance to earn the higher rate of interest, and so long as these sums are not withdrawn, they exercise no influence on the rate of exchange. Correction of an adverse exchange by balances due to the rate of interest is a temporary expedient only; and this applies to longer period loans made for that purpose, though in the latter case the effect is less transitory.

Down to 1914 the gold standard as a means of preventing undue fluctuations in the foreign exchanges worked very well, though in recent years doubts have been raised as to whether it worked so automatically in practice as the theory suggests. It certainly suited England, but in those days England was the financial hub of the universe, and London's claims on the rest of the world far outbalanced

foreign claims on London; hence, except in very abnormal circumstances, the Bank of England could adjust her reserves with little difficulty.

In these post-1914 years, the system has worked less smoothly, but since 1914, so far as international trade is concerned, we have experienced very abnormal conditions, and one change in particular has hampered the easy working of the system.

In the brief outline given above of the theory of the way an unfavourable exchange is corrected under the gold standard, very elastic conditions were assumed. No restrictions were introduced on the movements of gold and goods, and it was further assumed that any serious contraction of credit would be immediately reflected in falling prices and wages.

Before 1914 these assumptions were approximately true, but that is far from being the case to-day. Prices of particular goods, and wages generally, have acquired a much greater degree of rigidity than in pre-war years. Factor prices, especially, have become more and more fixed by long-term contracts, and have strenuously resisted any attempt to depress them. The policy of Governments, confronted by powerful trade unions, has been against reductions in wage rates, and Central Banks have been encouraged to offset the effects of gold movements. In other words, as has been pointed out elsewhere, the post-war economic system has lost its pre-war fluidity.

The result of this has been to hinder the rapid co-ordination between money incomes of all kinds and the changing economic situations on which the effective working of the gold standard depends.

Before comparing the analysis above with exchange movements under independent inconvertible paper standards, an argument against the gold exchange standard may be noticed. Under the pure gold standard, an attempt of a country to correct an adverse exchange rate has

reciprocal effects in the country to which it loses its gold. If England, when on the gold standard, loses gold, it has to alter its terms of lending, that is, to raise the rate of interest and restrict credit. For opposite reasons, the gold-importing country must lower the rate of interest and expand credit, otherwise its gold imports are useless.¹

This is not necessarily the case, so runs the argument, if England is on a gold exchange standard with exchange reserves in another gold standard country, say *B*, for if England draws on these reserves for the purpose of correcting an unfavourable exchange she must restrict her credit facilities as if she were actually losing gold.

But this does not necessarily apply to *B*: she is under no necessity to lower her rate of interest, or in other words to expand her credit, because, apart from the ownership of certain liquid resources, the situation has remained unchanged in that country.

INCONVERTIBLE CURRENCIES.—All that has been said on the manner in which the exchanges are corrected when the gold standard is working smoothly and effectively bears an apparent analogy with the exchanges under independent inconvertible standards outlined in the last section. Nevertheless the differences are real.

The first condition for stability of exchange rates, proportionate changes in the price levels of the countries concerned, is very much more difficult to obtain when the connecting link is a commodity or even several commodities, than when price changes are regulated by transfers of gold, for gold is a substance universally accepted, at least under normal conditions. The examples cited are theoretically correct, only in the absence of disturbing elements; hence the purchasing power parity theory has only a limited applicability to actual concrete situations.

¹ If credit is not expanded and contracted with gold movements the gold standard is not effective.

One very familiar disturbing element which can cause the market rate of exchange to differ widely from the equilibrium, or purchasing power parity rate, is that the present value of a paper currency is governed to some extent by opinions of its probable future value. If it is widely believed that its future value will be higher than it is at present, its present value will rise in sympathy; and the converse consideration applies in the case of an anticipated future fall. In other words the rates of exchange between two paper currencies may have only a very indirect relation with their relative price levels, and may be determined primarily by the monetary policies of the Governments or Central Banks. A speculative element thus enters into the exchange rates between two inconvertible currencies which is absent under a gold standard.

A second disturbing influence is one that we neglected in the hypothetical examples of adjustments between England and Germany, and that is changes in the intensity of demand for the products of one country by the other. In the case of two gold-standard countries, if one country desires the products of the other country very keenly, and the second country is under no necessity to purchase the products of the first, the country with the greater intensity of demand will continue to lose gold until its price level has lowered to the extent that its products are now desirable to the other country; that is to say, its price level will now be lower than it would have been but for the change in the demand for its goods.

With inconvertible currencies the case is different, because there is nothing to produce a direct reciprocal action on price levels and their relation to incomes (under the present assumption goods would not move freely between the countries as in the case of the coal, although artificial restrictions are absent). The country with the greater intensity of demand for products would therefore have to force the exchanges against itself to a very much

greater extent than is necessitated by the difference in price levels, if it is to sell its goods and restrict its demand for the products of the other country.

The purchasing power parity rate will only be the true equilibrium rate under special conditions seldom likely to be realised in practice.

GOLD AND PAPER STANDARD.—An intermediate case that can arise is where one country is on a gold standard and the currency of the other is inconvertible paper. Let us suppose the first country to be France, and the second to be England; then the rate of exchange between pounds and francs will be governed by the changes in English paper prices and incomes relative to the changes in gold prices and incomes in France. If gold prices and incomes remain stable in France while paper prices and incomes rise in England, the exchanges will turn against England, or at least become less favourable. If paper prices continue to rise and gold prices fall, the discrepancy in the exchanges will be accentuated; and the greater the degree of divergency, the lower will be the value of the paper currency in terms of gold, that is to say, the English pound will buy less and less francs, or, to put the matter in another way, the franc will buy more and more English pounds.

A rise of English paper prices would not necessarily be followed by unfavourable exchange with France, provided that French gold prices rose relatively higher, because in such circumstances the number of francs that could be bought with pounds would increase. Conversely the pound would buy fewer francs, even if English prices fell, provided that French gold prices fell to a greater relative extent.

When one country is on an inconvertible paper, and the other on a gold standard, the rates of exchange are governed partly by the monetary policy of the paper-issuing country and partly by influences coming from the course of gold prices.

14. Exchange Stability *versus* Price Stability

The relative merits of gold and paper standards with respect to international trade is still a controversial subject, and one likely to remain so. Each standard adjusts the balance of payments in a different way.

Under the gold standard the exchanges are relatively stable; the balance of payments has therefore to be brought into equilibrium by gold movements, the effect of which is to cause changes in the price and income structure of the countries concerned.

Under inconvertible paper standards the balance of payments is rapidly and automatically adjusted by the foreign exchanges. If there is an excess of imports, the currency, no longer supported by gold, depreciates immediately in terms of other currencies, and the exchanges turn rapidly against the country that has imported more than its exports will carry. Imports are quickly made dearer and exports cheaper, and adjustments take place between imports and exports, but with every change in relative price levels the exchanges fluctuate violently, and trade may become speculative because no one can foresee what the precise level of the exchanges will be a month or two in advance. But the picture must not be painted too darkly. An inconvertible paper currency need not depreciate through violent inflation, as did the currencies of the central European countries during the war years; by judicious management, as will be shown later, the exchanges can be prevented from getting out of hand.

Unfortunately, neither system gives us exchange stability and price stability at the same time. An effective gold standard gives us relatively stable exchanges at the cost of variations in the home price-level as a country loses or gains gold according to the state of the balance of payments. An independent standard allows us to manage, or control, the price-level, but at the cost of fluctuating exchanges. Which is the greater advantage seems to be a matter of

opinion. The answer depends partly on the economic conditions within a country, and partly on the volume of its foreign trade. A small country with a large foreign trade, and dependent on foreign capital, finds an advantage in a stable exchange that outweighs any loss from an internal price instability. On the other hand, a large and financially strong country, by adopting a policy of price stability, can isolate itself from the worst effects of world trade cycles.

Harbeler, however, argues that stable exchange rates are necessary in the long run for any extensive international exchange of goods and credit, at any rate, if trade is to continue on the basis of individual enterprise.

Fluctuating exchange rates are not altogether a matter of indifference to the wage-earner. Under an effective gold standard, when his country loses gold, his wages tend to fall; but under a paper standard, when the currency of his country depreciates abroad, he must pay more for the goods he imports; in other words, a fall in the foreign exchange rates tends to lower his real wages.

15. Further Consideration of Factors that Disturb the Equilibrium of International Prices

The changes in the demand of one country for the products of another have already been noticed. In recapitulation of this important point we may say that if *A* and *B* are gold-standard countries, then a falling off in the demand of *A* for *B*'s products will cause a change in the price and income structure of the latter country, because the exchanges cannot deviate beyond a certain point without *B* losing gold.

As, under the gold standard, the exchanges can only fluctuate within fixed limits, the adjustment would cause prices and incomes in *B* to fall considerably, assuming that the factors of production in home and foreign trade were remunerated equally, and that production for export operated under constant returns. It is easy to see, too,

that the larger the area represented by *A*, relative to the size of *B*, the more marked would be this effect.

In the case of inconvertible currencies, price and income structures in *A* and *B* would probably remain unchanged, as adjustment would be made by the exchanges turning against *B*.

It is assumed above that *B*'s demand for the products of *A* remains constant. In such circumstances *B* would have an excess of imports over exports. Now in most cases, *A*'s demand for *B*'s products is governed by their price, so that to bring trade into equilibrium once again, *B*'s products must be made cheaper. If *B* is determined to import the same value of commodities as she did before the change in *A*'s demand, she must balance the fall in the value of her exports of commodities by an export of gold. This, in turn, would lead to a contraction of credit and a fall in prices, and at a lower level of prices her exports to *A* would increase. On independent paper standards, *B*'s currency would depreciate in value in *A*, as the demand for it would decrease, so that for a given quantity of *B*'s goods, less of *A*'s currency would be required than before. In other words, the turn of the exchanges against *B* would lower the price of her export goods indirectly; losing gold when on the gold standard, would lower all prices directly.

Under normal circumstances, and with freedom of trade, there is a natural tendency to equilibrium under either standard. In the short period, an adverse trade balance is probably redressed at less inconvenience to home prices and incomes under a paper, than under the gold, standard. It should not, however, be hastily concluded that when a country is off the gold standard it can allow the exchanges to turn against it with impunity. If for any reason equilibrium is not soon reached, the fall in value of its export goods, although it increases the volume of the export trade, must in the long run have an unfavourable

reaction on the price and income level at home. In addition to this, fluctuating exchange rates make foreign trade highly speculative, as exporters can never estimate in advance what they will ultimately receive for their goods.

Disequilibrium, however, can occur from the side of supply as well as demand. Suppose, for example, that in consequence of technical progress costs of production fall sharply in *A*, then an impetus will be given to her export industries. What effect this will have on the ratios of exchange, measured in commodities, between the two countries will be determined by the elasticities of the demands of each country for the products of the other. If these demands are fairly rigid, the change in the ratios may be more than proportional to the relative fall in the costs of production in *A* compared with *B*. Under such conditions there would be a relative fall in incomes and prices in *A*. If, however, the demands of *A* and *B* for each other's products were elastic, a contrary result would follow, for *A*, being able to dispose of an increased production on not unfavourable terms, would retain the advantage of her decreased relative costs.

Another disturbing factor which must be taken into account is change in the rate of foreign investment. Country *A*, for example, may decide to increase her investments in country *B* or to curtail their rate. In either case the balance of payments is disturbed and adjustments on the lines already discussed are necessitated.

If *A* makes a loan to *B* it is usually necessary, in order to effect the transfer, that *A*'s products be made relatively cheap and those of *B* relatively dear. As has already been shown, this means that if *A* and *B* are on paper standards, or at least on independent standards, the rates of exchange between the countries must be adjusted; whilst if they are on the gold standard the price and income structure must be altered in both countries.

This is easy to understand if it is remembered that what is loaned must be either gold or goods. If *A* and *B* are gold-standard countries, and *A* makes a loan to *B* and sends gold, prices and incomes will fall in *A*. In most cases, of course, the loan in its ultimate form simply means a transfer of goods from *A* to *B*, and is effected through the ordinary channels of trade. Now this really means that *A* must increase its exports to *B* by the amount of the loan, or alternatively, that *A* must increase its exports to and reduce its imports from *B* to the extent of creating a balance of exports over imports equal to the amount of the loan.

Now this can only be done through the ordinary channels of trade by making it easier for *B* to increase its purchases of *A*'s goods, and at the same time making it more difficult for *A* to purchase *B*'s goods. This desired result can be attained in two ways: either by directly lowering the price level in *A* through exporting gold, or, if the countries are not on the gold standard, by allowing the exchanges to turn against *A* so that the price of her export goods is lowered indirectly. In either case, *A* would be a good market in which to buy, and a bad market in which to sell, from the point of view of *B*. Under independent paper standards it is more accurate to say that *A* would be a difficult market for *B* to sell in; for as the exchange rates are in *B*'s favour her goods would become automatically dearer in *A*.

It should be noted that the above is not inconsistent with the commonplace of the textbooks that a favourable trade balance means a favourable foreign exchange. There is a difference between a balance that is the result of a loan, and a balance that arises from an ordinary trade transaction, as in the former case the balance has not to be repaid immediately.

When the loan is repaid the exchanges are turned in favour of the lending country, and this applies at the periods when interest on the loan is remitted. In the case

of countries on the gold standard the repayment of a large loan would probably necessitate some transfer of gold as the exchanges can only move within certain limits.

Finally, there are the effects of tariffs on imports and bounties on exports to consider, but these are so important that it will be necessary to examine them later, in another section.

16. The Relation between the Bank Rate and the Foreign Exchanges

Under independent standards the rate of exchange between two countries is fixed on the foreign exchange market at the rate that will tend to bring the Balance of Payments into equilibrium.

But the exchange market can only fix the rate of exchange when other factors that directly, and indirectly, influence the balance of payments are settled for it. The exchange market cannot influence these factors. Changes in interest rates, and relative price-levels, however, continually disturb the foreign exchanges, so it is sometimes desirable for the Central Bank of a country to influence the exchange market. It does this by means of the Bank Rate.

A change in the Bank Rate may affect the foreign exchanges in several ways. In the first place a rise in the Bank Rate tends to attract short-term funds to that country, and, in consequence, to raise the value of its currency in the exchange market. A fall in the Bank Rate has the opposite effect. Changes in the Bank Rate also tend to affect the long term capital market and to move securities from one stock exchange to another; but the movement of funds of any kind always influence the rates of exchange between the currencies of the countries concerned.

Changes in the amount of currency and credit quickly follow changes in the Bank Rate. A rise in the Bank Rate, for example, will indirectly cause a fall in the home

level of prices, which in turn will stimulate exports, and diminish imports. In this way, a change in the Bank Rate will alter the relative value of a currency on the foreign exchange market.

17. The Effects of an Undervaluation of a Currency on the Foreign Exchange Market

A currency is said to be undervalued abroad when, for any reason whatever, its value on the exchange market is less than that warranted by the level of home prices, and, incidentally, by the state of the balance of payments.

Let us suppose, for illustration, when a country's balance of payments is in equilibrium, that it deliberately depreciates the value of its currency abroad without at the same time allowing its internal price-level to rise. Clearly, the effect will be to increase the volume of its exports without altering the volume of its imports. It follows, therefore, that the extra money earned by the export industries will be spent, not on additional imports, but on goods produced at home.

It will be noted that this case differs from that where the exchanges have been left to follow their natural course. In those circumstances the stimulus to exports would last only so long as was necessary to restore equilibrium in the balance of payments.

But where the undervaluation has been deliberately designed the effect may continue for a considerable period provided that other countries do not retaliate, either by depreciating the value of their currencies or by restricting their imports from the country with the under-valued currency, either by means of tariffs, or by other means.

In practice, that is exactly what would be likely to happen, so that the beneficial effects of under-valuation would not last very long. Apart from that, a war of currency depreciation between several countries cannot fail to have adverse effects on the trade of all. The motive

for under-valuation is usually the desire to stimulate employment at home.

It does not follow that if a country's currency is over-valued on the foreign exchange market that exports are impossible. In such a case, however, exports would be confined to lines in which the country had a high comparative advantage, and imports would have to be severely restricted in order to keep the balance of payments in equilibrium, at least in normal circumstances.

18. "Pegging" the Exchanges, and the Exchange Equalisation Account

"Pegging," or fixing the exchanges, is a device that necessity compelled during the war years. By this means a currency can be given, artificially, a higher purchasing power in some foreign market or markets than it possesses at home. England adopted this method to stabilise her exchange with America from 1916 to 1919: loans were raised in America, and huge amounts of American securities held by Englishmen were sold over there. These credits were used by the agents of the British Government, J. P. Morgan and Co., of New York, to buy up all exchange on London offered at 4·765 dollars to the £1 sterling, and this rate was maintained for three years, although it was below mint par, and even below the normal gold point: a rate so favourable to England would have been impossible but for the fact that during the war the transport of gold was so costly owing to the risks of loss involved.

The suspension of the Gold Standard Act in 1931 again made necessary some device to prevent violent fluctuations in the foreign exchanges, and in 1932 the Exchange Equalisation Account was opened at the Bank of England.

Early in 1932 unsettled financial conditions abroad were causing capital to flow into London, and tending to swing the exchanges too much in our favour. At the same time,

no one could be certain but that at any moment a reverse movement might take place in the opposite direction.

To prevent violent fluctuations in the foreign exchanges and to stop speculative dealings in our currency, the Government decided to establish reserves of gold and foreign exchange at the Bank of England. It was stated at the time that the purpose of this fund was not to connect English paper currency to the American dollar at any particular level, but only to keep it in some sort of harmony with that of the gold-using countries—France and the United States.

The manner in which the account is operated is simple enough. When for any reason the exchange with America, for example, rises too much in our favour, the account is used for the purpose of buying dollars in order to bring down the rate. On the other hand, should English currency depreciate too much in terms of dollars, then gold, foreign exchange, or the dollars obtained in the above way would be sold for English currency.

In this way the rate of exchange between England and America, or any other country for that matter, can be kept in the region of the equilibrium rate until the time is ripe for stabilisation at a particular level.

The mere knowledge that such a fund is available for use is sufficient to prevent speculation on falls and rises in the value of our currency, and as an example of the way in which serious natural fluctuations are smoothed away the following instance may be noticed.

In the early months of 1933, as a result of a banking crisis in the United States, funds began to flow into London from New York, and, in order to prevent too sudden and sharp a rise in the exchange value of the English pound, the Exchange Equalisation Account was used to purchase dollar exchange.

The working of the account may be compared with the regular Forward Exchange Market. Even between two

countries on the gold standard, movements of gold would have been much more frequent but for the operations of this market; and the principle applies with respect to any standard.

Suppose, for example, that England has to make large payments to Germany. The price of marks in London will rise rapidly and there will be a low rate in Berlin for sterling. London bankers would therefore draw finance bills on their agents in Berlin, and as these bills run from one to three months before they are due, the London banker is put into possession of marks which he will not have to remit to Berlin for some time, and as the supply of marks in London is increased at the time when the bill is drawn, the rate of exchange on Berlin does not rise so high as it otherwise would have done. At a later period, purchase of marks to meet the bill when it becomes due will increase the demand for bills of exchange on Berlin and so limit a fall in the exchange rate, should a fall prove likely.

Dealings in future exchange thus steady the rates over a period of time and narrow the range of their fluctuations.

The above comparison is illustrative only and must not be stressed too far. The Exchange Equalisation Account is a Government Department—a sub-department of the Treasury—acting through the agency of the Bank of England, and by 1937 its resources had reached the colossal figure of 575 million pounds; it is thus able to exercise a very powerful influence on the foreign exchanges.

It must be emphasised that the primary object of the Account is to counteract the effects of the movements of short-term funds, or floating balances, the movements of which may swing the exchanges in a direction contrary to that dictated by the state of the real trading account. An undesirable influx of floating balances, by appreciating the value of the pound, may handicap the export trades severely.

The Exchange Equalisation Account does not render the Bank Rate obsolete as the Fund is not a suitable instrument for restoring equilibrium in the balance of payments where disequilibrium is caused by an excess of imports over the total visible and invisible exports of services and commodities. Changes in the Bank Rate effect the credit and income structure of a country. The workings of the Exchange Equalisation Account have no such corrective tendency.

The Account would still be useful should ever we return to the gold standard. One of the weaknesses of that system was the liability to a drain of gold at any time due to a movement of short-term funds caused by a relative rise in the rate of interest in some foreign financial centre. Such a drain might cause a contraction of credit at a time when the conditions of industry were such that an expansion of credit was justified and necessary. Any movement of floating balances, even on a gold standard, could be easily offset by the Exchange Equalisation Account.

19. Exchange Control

The technique and conditions of international trade have changed very considerably in recent years. Much that has been said in previous sections pre-supposes more or less *laissez-faire* conditions, but these conditions are practically non-existent in the world of to-day. It is no longer true to say that trade between countries is simply trade between individuals, for in a large number of countries the Government now intervenes actively in foreign trade, and in some places controls its volume and direction; in Germany, for example, a licence is required before goods can be imported.

State intervention in foreign trade has several aspects, but for the moment we shall be concerned only with the foreign exchanges.

Certain forms of indirect control have been noted already. When the world was on a gold standard, Central Banks influenced the exchanges by their bank rates and open-market policies. More recently, exchange equalisation accounts have exercised a more thorough, though still indirect, control.

In many Continental countries, however, exchange control has been carried to much greater lengths, and by more direct methods, in order to protect their domestic currencies, to regulate imports, and to prevent the "flight" of capital. Compared with the position in 1914, there is now a much larger volume of short-term funds floating from financial centre to financial centre; and owing to the greater rigidity of the economic systems, there is an increasing difficulty in the way of keeping the balances of payments in equilibrium. In the early post-war years, paper currency standards that were fluctuating violently in value gave rise to a large amount of exchange speculation. Exchange control as a comprehensive policy, however, originated in Germany during the financial crisis of 1931, as a means of protecting the gold reserves, and preventing the flight of capital; incidentally, it allowed Germany to cease the payment of most of her foreign debts.

The different forms of exchange control are very numerous, and vary with the object of the control.¹ Where the object is to regulate imports, in the most extreme form, all exporters, and other persons holding foreign exchange, must sell it to the Central Bank. Importers, on the other hand, can purchase foreign currency, or exchange, only through the Central Bank. But the Central Bank will sell foreign exchange only for such imports as are considered necessary to adjust the balance of payments, so to escape from the difficulties caused by the independent restrictions

¹For a comprehensive account the reader should consult *Einzig: Exchange Control*.

imposed by different countries; clearing agreements have been made between many pairs of States.

CLEARING AGREEMENTS.—When a clearing agreement has been reached between two countries, importers in both places pay into an account at their respective Central Banks the purchase price of all goods imported. These amounts are then used to pay exporters. Where export credits and import debts do not offset each other, exporters are paid only when, and so far, as funds are available, unless the Central Banks make advances to exporters until such times as funds are available on the clearing account. The rate of exchange between the two currencies is usually fixed for the term of the agreement.

The clearing system has been very adversely criticised, mainly on the ground that such agreements are bilateral, when the natural tendency of international trade flows along multilateral lines. There is no natural tendency for visible exports and imports between any two countries to balance; one effect of clearing agreements, therefore, is to force trade into artificial channels, and to limit its volume.

Exchange clearing is not without supporters, however, and Einzig has argued that with a technique improved by experience, the system need not remain bilateral; and that the agreements have discouraged dumping, and currency depreciation, because a country with a depreciated currency must pay for a given quantity of imports with a much greater quantity of exported goods.¹

In some ways the technique of clearing agreements has been improved—by the payments agreement, for example, which allows direct contact between exporters and importers, and which regulates the volume of trade between the two countries to the agreement in such a way that exporters and importers are certain to be paid within a given period. It is doubtful, however, if any variation

¹ Einzig: *Exchange Control*.

of the clearing system will remedy the defects of exchange restrictions. Under a free foreign exchange market system, international trade will flow along lines set by the limits of comparative costs. Under a system of exchange control a country will not necessarily buy in the cheapest market: it may buy from *B*, rather than from *A*, as in the one case it can pay with a credit under a clearing agreement, and in the other case it must part with currency in order to acquire the foreign exchange necessary.

Exchange control may also allow a strong country to acquire a strangle-hold over the trade of a weaker country, as in order to obtain payment for its exports under a clearing agreement, the weaker country may have to import goods which it really does not want, and in any case, its freedom of choice of imports is limited. Apart from any question of limiting the volume of international trade, exchange control gives certain strong countries the power to influence the direction of the trade of weaker countries that is undesirable in the interests of world trade.

STANDSTILL AGREEMENTS.—Some forms of exchange control have for their immediate object the prevention of movements of capital. The standstill agreement is a German invention, and in substance is a moratorium on outstanding short-term foreign debts, especially inter-bank debts. Standstill agreements were first made during the crisis of 1931 when the German banks could not pay their short-term debts to foreign banks because the necessary amount of foreign exchange was not available. Under these agreements the short-term debt is either converted into long-term debt, or arrangement is made for a very gradual repayment.

TRANSFER MORATORIA.—A somewhat similar device is the transfer moratorium. Where such a regulation is in force, importers and others pay their foreign debts in their

domestic currency to an appointed authority. These funds are remitted abroad when the moratorium is concluded. Sometimes a foreign creditor is allowed to use his credit in the country imposing the moratorium in certain ways specified by the Government.

BLOCKED ACCOUNTS.—The blocked account is the logical outcome of the standstill agreement, and the system of transfer moratoria. Foreign debts, paid in domestic currency to the Central Bank, are said to be blocked when the funds cannot be remitted abroad without the permission of the Government.

It is not in the interest of the debtor country, however, that these funds stand idle, as in that case a contraction of credit must follow. Foreign creditors, therefore, are allowed to use these funds in ways dictated by the Government within the debtor country. In practice that means that they must sell them for what they will realise on the open market, and as a general rule, blocked accounts are heavily discounted. In Germany, the surplus fund arising from the sale of blocked accounts has been used to subsidise certain industries.

For obvious reasons, the volume of blocked accounts has declined rapidly in recent years, and Germany now subsidises her export trades by means of a fund created by taxes levied on production used for domestic purposes.

The general principles of exchange control should now be clear. Instead of adjusting supply and demand through the mechanism of price, exchange control seeks direct methods of adjustment, either in the form of general regulations and prohibitions, or by arbitrary decisions with respect to payments for imports.

The circumstances that led up to exchange control were abnormal, and in some instances, as an emergency measure, a case can be made out for exchange restrictions. Unfortunately, the remedy tends to perpetuate the disease, and

the vicious circle, once started, seems impossible to break. Once the State intervenes directly in the foreign exchange market, imports and exports are restricted, partly because trade becomes bilateral, and partly because of the uncertainty of receiving payment for goods exported. Added to that, foreign lending declines inevitably, and foreign lending is a mainspring of international trade.

20. Protection

Protection is the most general and widely used form of indirect exchange control. The general case for free trade *versus* tariffs was discussed in an earlier chapter, where it was shown that most of the arguments in favour of import duties rest ultimately on fallacies. No one will deny, of course, that any particular industry will gain by protection, but the economist is concerned with the country as a whole. Most economists again will agree that there is a case for protecting an industry that is vital to the security of the country in wartime, but the argument rests on political, and not on economic grounds. The argument that it is necessary to protect infant industries appears very alluring at first glance, and it received the support of a free-trader like Mill, but there is little reason to suppose that there are any economies of large-scale production possible under protection that are not equally possible under free trade. In any case, the economic argument for protecting infant industries ends as soon as the infant is able to stand upon its feet, but experience teaches that the protection afforded is seldom or never removed when the state of maturity is reached. Indeed, when the industry consists of a number of firms of unequal strength, the weaker firms can always argue that if the protection were removed, they must succumb. The same holds with respect to new firms entering the industry.

A new industry can only begin if there are adequate supplies of skilled labour, trained technicians, and leaders

of industry. Protection may be necessary to bring them into existence in an undeveloped country, but in a country already industrialised they exist.

It is often argued that the imposition of a tariff will force foreign firms to move either the whole, or a part of their production plant, within the borders of the tariff imposing country, and this argument is supported on facts. The total capital and population of the country may increase, unless the import of capital is balanced by the export of other capital, but whether the productive capacity per head of the population will increase by moving an industry from a more, to a less favourable site is doubtful.

It is also true that where a country is in a monopolistic position as the buyer or seller of a particular commodity it may be able to influence the terms of trade in its favour by means of tariffs, but what it may gain in one direction it may easily lose in another; the position is usually much more complex than the protectionist argument assumes.

There are, however, several arguments advanced in support of protection that need a closer examination.

21. The Position of a Free Trade Country in a World of Protection

It is often argued that although free trade may be preferable in the abstract, yet in a world of protectionist countries no free trade country can permanently exist owing to the impossibility of maintaining its balance of payments in equilibrium. Tariffs are necessary, if only as a means of bargaining power.

But the free trade argument does not depend on the absence of tariffs. Even in conditions of perfectly free trade every exporter has to face the problem of transport costs, and these costs have a similar effect on trade to that of tariffs. The existence of transport costs from *A* to *B* is a natural tariff on goods entering *B*. But it is a fact of

experience that transport costs need not prohibit trade between *A* and *B*, and the argument holds with respect to man-made tariffs.

It is not a valid argument to assert that because countries *B*, *C*, and *D* impose tariffs that *A* must do likewise. It is true that these tariffs injure the export trade of *A*, but in so doing they limit the export trade of the countries imposing them as well. If country *A* should decide to retaliate with tariffs against *B*, *C*, and *D*, it will merely cripple further its own foreign trade and that of countries *B*, *C*, and *D*. The tariffs imposed by country *A* will not remove in any way the damage done by the tariffs of countries *B*, *C*, *D*.

Against the argument that the tariff of *A* may be used as a basis for an all round reduction of tariffs, experience suggests that this is unlikely to happen in practice. On the contrary, each country will have an incentive to raise its tariffs in order to increase its bargaining power, so that if any reductions are ultimately made, tariffs will merely be stabilised on a higher level.

22. Trade Between High- and Low-Wage Countries

The question whether permanent trade is possible or not between a high-wage and low-wage country has been a vexed one for some years. It has been and is still argued that a country with a high standard of living cannot compete successfully with India, China, and Japan, for example, unless the country in question erects around its shores a barrier of tariffs.

Now in the first place it does not necessarily follow that a country with a high-wage level will produce its goods at proportionately high expenses of production: indeed the first condition of high wages is high productivity, and it can be argued with justice that the standard of life in the Far East is low, simply because the average productivity per head is low.

This must not be interpreted to mean that wages multiplied by productivity will give an approximately identical cost per unit of goods in every case, and that the belief actually founded upon experience that under free competition our manufacturers cannot compete with, say, Japan in our home market, is a delusion. So long as the law of comparative costs applies, this inability to compete might prove to be the case irrespective of any differences in wages and standard of life.

But while this can be conceded, as indeed it must, that a country can be undersold in certain commodities in its home market, it is quite a different proposition to generalise from even a number of cases that, under free trade conditions, a country can be undersold in its home market with respect to every commodity. No question of wages alone is likely to counterbalance the differential advantages of production with respect to every commodity at the same time between two countries. Goods pass between countries only by way of trade; in the long period, therefore, if some home manufacturers are undersold in certain commodities, these imports must be paid for by other products and services. No country can maintain a constant level of imports, and export nothing in return. If in the long run, as we have already shown, no country can permanently sell without buying, the converse must hold equally that no country can permanently buy without selling.

The general truth of this proposition is beyond dispute, but it is equally true in practice that in any country with a high-wage level and standard of life a good deal of dislocation and hardship can follow from the entry into its markets of goods produced at much less expense. It is this fact, of course, that gives the argument for tariffs in this connexion, so much force.

But the general argument against tariffs that has been noted elsewhere is applicable even in this connexion. Particular industries and individuals would benefit, but at

the expense of the community as a whole, in the shape of a smaller volume of foreign trade.

The problem of competition with low-wage countries is much more acute with respect to the neutral market. Irrespective of the relation between the level of its wages and the productivity of its workers, a country with a high-wage level can only export abroad, to a country that is dependent on its products; but if these prices rise beyond a certain point the foreign buyers will restrict their consumption, so that the volume of exports will decline even if their value remains constant. In such a case there will be reduced employment in the export trade.

It is much more probable, however, that the foreigner will have alternative sources of supply, and if these alternative goods are made by cheap labour in some competing country the position is one of grave difficulty. In the past, America has shown that high-wage countries can compete successfully in neutral markets by virtue of greater productivity due to the greater efficiency of its workers per head and the superiority of its industrial organisation.

Success of this kind, however, must be more difficult in the future. Industrial technique is no longer the monopoly of a few nations, and automatic machinery has doubtless equalised the former differences between the Lancashire and Japanese cotton operatives.

It is therefore impossible to deny that in neutral markets a country like England is in real danger from the competition of countries with a lower standard of life, unless by some means or other she can increase the efficiency of her workers. She cannot protect her neutral markets by tariff walls. It has been suggested that England could support certain foreign exports by means of subsidies, and thus sell them permanently below cost, and recover the deficit by tariffs on imports of suitable goods, but any such device has only a limited field and

it is doubtful if the remedy is worth the price that must be paid by the country as a whole.

23. Dumping

One of the most popular arguments in favour of tariffs is that free trade countries are peculiarly liable to have their industries ruined through dumped goods, but the same considerations hold here as in the case of underselling by countries with a lower standard of life. Short of absolute prohibitive duties, which would stop imports of any kind, experience seems to show that tariffs cannot stop dumping, as highly protected countries have at times resorted to special measures to deal with this problem.

Dumping is simple price discrimination between countries, but it makes no difference whatever to the importing country whether the cheap goods enter the country as a result of some comparative advantage in production, or because they are dumped by some discriminating monopoly. From the consumers' standpoint, the benefit is the same in both cases, so that every argument against dumping can be used as an argument against the principle of comparative costs.

Where the dumped goods are means of production, the benefit derived by the importing country is even more marked, and it is probable that the balance of advantage inclines more to the importing than to the dumping country.

Dumping is an evil only when it is temporary, or sporadic, for several reasons. It is an evil when the object is to stifle competition with the object of imposing later a high monopoly price. Sporadic dumping may bring into being industries that may have to be abandoned when the dumping of means of production ceases; and the temporary dumping of consumers' goods may lead to undesirable changes in demand.

24. Tariffs and Adverse Trade Balances

The fact that the gold standard did not function normally between 1925 and 1931 brought up arguments in various forms for correcting an adverse trade balance by means of restriction of imports. Mr. Keynes also argued for tariffs on imports as a means to restoring equilibrium between the foreign trade balance (that is, the excess of all payments due to us from abroad in any year over claims on us from overseas) and foreign investments.

So long as the gold standard was working effectively, that is, so long as gold movements were allowed to exercise reciprocal effects on prices and terms of lending, it is obvious that no great discrepancy between the foreign trade balance and the rate of foreign investment could occur. Mr. Keynes argued¹ that as the gold standard was not working effectively this check was inoperative, and that, as in a developed country like England the tendency is for the home investment market to absorb less and less of home savings, the amount of capital invested overseas must progressively increase, because the rate of interest will tend to be lower here than in the younger countries.

Disequilibrium between the foreign trade balance and the rate of foreign investment must necessarily creep in, and persist because, owing to the rigidity of our wage rates, no premium on exports can be given in the form of decreased expenses of production; hence chronic unemployment must result.

The only solution to the difficulty, so ran the argument, was to increase the foreign trade balance by a reduction of imports through the medium of tariffs.

But even under the gold standard the objections are several. It does not necessarily follow that foreign investment will continue to be relatively more attractive,

¹ *Treatise on Money*, 1930, Vol. I.

as in the future we shall have to face the intensified competition of foreign lenders in our investment markets overseas, which must, of course, depress the rate of interest there. Neither are the foreign trade balance and the rate of foreign investment perfectly independent variables. Lending abroad curtails purchasing power at home and tends to check imports, while the transfer of purchasing power from home to abroad tends indirectly to check imports.

A tariff on imports must reduce imports, but only if demand for our exports remained unchanged, would it increase the foreign trade balance; for apart from additional lending, which would increase the disequilibrium, the power of the foreigner to purchase our exports would be reduced.

But whatever, if any, force the argument for tariffs as a means of redressing adverse balances possesses, and it is of a temporary nature only, it rests on the assumptions that prices are held fixed in this country by rigid wages, and that the rates of exchange between different currencies are kept rigid by the gold standard. The force disappears as soon as we abandon the gold standard because the balance between exports and imports is automatically adjusted, as we have already seen, by variations in the foreign exchanges. A break with the gold standard tends to act as a stimulus to exports, but under such conditions a tariff, by reducing imports, would counteract this tendency by increasing the difficulty of exports.

It is sometimes argued that a tariff is still necessary to redress the trade balance, because correcting the balance by turning the exchanges against us, *i.e.* by depreciating the currency, cannot continue indefinitely, and that a tariff would be necessary in the end to stop the depreciation of the currency by restricting imports. But leaving the exchanges to find their natural level does not mean that our currency would continually depreciate abroad until its

value fell to zero. This would happen only if our currency were progressively inflated at home, and that is unthinkable with a country like England. So long as the currency was not deliberately inflated at home, a fall in the rate of exchange against us would act as a rise in the bank rate under the gold standard, imports would be discouraged and exports encouraged. All the advantages of a tariff are obtained by free fluctuations in the exchanges without the disadvantage of reducing the total volume of foreign trade. The above must not be read as an argument in favour of fluctuating exchanges, the disadvantages of which have already been pointed out, but only as an argument against the value of tariffs as a means of redressing an adverse balance.

25. Bounties on Export

Bounties on export have the opposite effect to tariffs on imports on the terms of trade; for by artificially stimulating exports they increase the country's demand for foreign products. What actually happens to the terms of trade will depend on the elasticities of demand in the countries concerned. If *A* grants a bounty on a commodity, the demand for which is elastic in *B*, there will be some increase of imports in *A*, and the consumers will reap some benefit from cheaper imports, but at the expense of the taxpayers in general.

On the other hand, to take the extreme case, if *B*'s demand is perfectly rigid the whole of the benefit of the bounty might be appropriated by *B*, as *A* might have to pay over the whole of its increased production in order to obtain the same volume of imports as before. Cases of this kind are not likely to occur in practice, but the fact that it is possible for the greater portion of the benefit to pass into the hands of the foreigner is a strong argument against this method of stimulating certain export trades.

Bounties are used for various purposes. Coal, for example, is produced for home consumption and for export, and if the export trade is handicapped by high expenses of production which cannot be reduced, a tax can be levied on all coal used for domestic purposes and the proceeds applied to subsidise coal for export.

The principle of bounties, however, is not wise except in very special cases, and even then, only as a temporary expedient. As Adam Smith and Ricardo showed long ago, export bounties deflect trade from the natural directions set by the limits of comparative costs. In some cases they encourage an industry to expand beyond the point at which diminishing returns begin; in other cases a country is induced to produce goods that it could acquire more cheaply from abroad in exchange for goods in the manufacture of which it has a comparative advantage.

26. The Effects of Import Duties

The general incidence of import duties has been discussed in another chapter, but a little further analysis is desirable. The direct effect of import duties depends on a number of factors. If the commodity in question cannot be produced at home, the effect will vary with the proportion of the total supply taken by the tax-levying country, although the final answer will depend on the conditions of production abroad, that is to say whether the commodity is being produced in conditions of increasing or diminishing returns. It is only when the taxing country is a monopolistic buyer that the whole burden of the tax may be thrown upon the producer; if the taxing country is but one of a number of alternative markets, it is possible for the price to rise there to a greater extent than if the commodity were produced also at home.

Other things remaining equal, when the commodity is produced both at home and abroad, the greater the elasticity of the home supply, and the smaller will be the

effect of the tax on prices. A similar result will follow if the foreign supply is inelastic.

The amount of the price rise will also be offset by the elasticity of demand for the commodity at home and abroad. If the foreign demand is highly elastic, the tax will have a marked effect on the price in the taxing country, as a slight fall in the price abroad, caused by a contraction of exports, would stimulate demand there. On the other hand, a rise in the price in the importing country will tend to be checked if demand there is highly elastic.

The indirect effects may be not less important than the direct effects, though this is true of all taxation. If the demand for the commodity on which the duty is imposed is inelastic to any degree, the demand for other goods and services will be changed.

27. Preferential Duties

The real case for preferential duties rests on the free trade argument. If an all-round reduction of duties is not possible, then a preference granted to a certain country or countries is the next best thing. The preference may take the form of a reduction of the duties on the imports from a certain country, while the tariffs with respect to the rest of the world remain unchanged; or it may take the form of an unchanged tariff with respect to one country when the tariff level against the world as a whole is rising.

The significance of the preferential principle is that it constitutes a breach, however slight, in tariff walls; that is to say, it is a step in the direction of free trade.

In these days, preferential duties are sometimes advocated as a means of welding certain nations into an economic unity. The British Empire is now linked by a system of preferential tariffs, and, it should be noted, the relations between England and the Empire are reserved from the scope of the Most Favoured Nation Clause.

28. The Most Favoured Nation Clause

The Most Favoured Nation Clause in a commercial treaty between two countries means that each State binds itself not to impose higher duties on goods imported from the other State than it imposes on similar goods imported from a third country. This means also that if one of the parties to the agreement lowers its duties on the goods imported from any third country, its duties on similar goods imported from the other contracting party are automatically lowered to the same extent. Any State may have a Most Favoured Nation agreement with a large number of other States, so that every reduction of duties that it makes with any one State is extended automatically to each of these other States.

The Most Favoured Nation Clause has several definite advantages. In the first place, when practised on a wide scale, it ensures equality of treatment between nations, and equality of treatment is the first condition for good relations between States. Secondly, so far as its application extends, a country has a uniform duty on each class of good imported, and that is a convenience that lessens the cost and trouble of collecting the duties.

On the other hand, the Clause allows some countries to gain tariff concessions without making any return. Secondly, it has been argued that although in some cases the Clause has worked towards a general lowering of tariffs, it has operated more frequently in the other direction—a country has refrained from making a tariff reduction to another country, because such a reduction would be extended over a wide area. Those who advocate the formation of economic unions oppose the Clause on the ground that all such unions must be founded on preferential tariffs. Some countries, even when bound by Most Favoured Nation Clauses reserve certain countries from its operations. Great Britain and her Dominions form the most important example.

the English farmer's point of view, competition from the products of the colonies differs in no way from that of the products of non-Imperial countries.

The interests of the colonial manufacturers on the one side, and those of the English farmers on the other, appear a fatal obstacle to any permanent and comprehensive form of Imperial Preference.

31. Quotas

Closely connected with the principles of preference and tariffs as a means of protecting home production from international competition is that of the quota. The principle of the quota applied to any commodity is that foreign imports shall be restricted to a certain percentage of the total consumption.

Now clearly a quota with respect to any commodity that is fixed at a higher quantity than that which would be imported normally under free competition is purely formal. It could exert no effect on prices, unless the conditions of the supply changed; neither, of course, could it assist the home producer.

But a quota fixed at a lower quantity than that which would normally be imported under free competition would have positive effects. In the first place it would reduce imports more directly than a tariff would, and by conferring a partial monopoly on the home producers would tend to raise prices to the consumer. The determining factor would no longer be the world price, but the power of the home producers to exact the maximum price that the product would bear.

In the second place it would tend to expand artificially the production of the commodity in question, and in this respect the effect would be identical with that of a tariff, and all the objections that can be urged against a tariff tending to an uneconomic distribution of resources apply with equal force to quotas.

Wheat quotas, although they restrict the import of a commodity with a fairly rigid demand, are less likely to cause a high rise in price than commodities peculiarly liable to monopolistic control, though protection in any form would probably change the conditions of agricultural production in the long run. On the other hand, on account of climatic influences, wheat supplies are more variable than most manufactured products. A series of good harvests would cause farmers to agitate for the quota to be raised, just as public opinion must force its lowering in times of scarcity. Unless the quota were raised in years of plenty, the increased production of wheat would prove unprofitable to the farmers, but unless the quota was maintained in times of scarcity the agricultural interest would be dissatisfied at not being allowed to reap the benefit of scarcity prices.

In the long run, other things remaining equal, the quota system must tend to raise prices to the consumer, but it has one advantage over the direct tariff. Part of the increase in price of any commodity on which a tariff is imposed goes to swell the Government finances, but under the quota system the Government makes no direct gain. Agriculture can therefore be given a margin of protection against imports of foreign corn at less expense to the general consuming public than by a tariff.

But an exact comparison is not easy. There is something to be said in favour of a Government deriving revenue from a tariff. Again, in the case of a tariff, if costs of production in the exporting country are falling, prices may rise but little in the importing country. That will not happen in the case of the quota, as the amount that can be imported is fixed; indeed, if costs of production are rising in the country imposing the quota, and falling abroad, prices will be higher in the quota-imposing country than in the rest of the world. One strong argument, from the protectionist point of view, in favour of quotas is that the

amount of protection afforded by them can be easily increased even where nations are bound by the Most Favoured Nation Clause, as the quota system allows the imports of a country to be regulated without imposing, or changing, the amount of the import duties.

In this sense, the quota system is a more serious obstacle to international trade than the import duty.

The case of a quota for Empire-grown wheat may also be briefly noticed. So long as the Empire produced a surplus for export over the amount of the quota in England, and so long as free competition continued between colonial producers, it is obvious that the English consumer could not be damaged, as competition between the exporters of wheat to England and the exporters of the surplus to neutral countries would prevent the price of Empire wheat imported into England rising above the world price from the external side. Any forces tending to raise prices in the English market would come from the side of the English agricultural interests, and the amount of the rise would be governed by the relative proportions of the two quotas.

On the other hand a quota for Empire-grown wheat would tend in the long run to restrict competition between producers in order to sell the quota at the maximum price the competition of English farmers would allow. The final result must depend on the relative sizes of the two quotas, and the proportion they bear to the amount of foreign wheat imported.

In any case we get back to the fundamental position that any limitation on the supply of imports produced under free competition must tend to raise their price to the consumer.¹

¹ The Act, designed to assist British Wheat Production, is only a partial application of the quota principle. It does not in itself directly restrict the amount of wheat imported: it merely guarantees a market for a fixed quantity of British wheat at a price fixed by the Government. For details of changes in policy the reader should consult the *Board of Trade Journal*

32. Import Boards

A further method of protecting the home producer is by means of Import Boards. An Import Board for a certain commodity purchases all foreign imports on behalf of the Government. The main argument in favour of Import Boards is that of large-scale enterprise, but it is possible to over-estimate the gains likely to accrue in this direction.

A second argument in favour is that a Government in control of the whole of an import is in a stronger position than private enterprise for resisting the attempts of foreign combinations to raise prices.

A further argument, though of little force, is that a system of Import Boards eliminates the effect of speculation on prices. Speculation, however, as has already been noted in various connexions, so far from producing those violent fluctuations in prices that are so harmful to producers, has normally the opposite effect.

Import Boards, like quotas, appeal to those who favour "planned" Government because, through their agency, the quantity of imports can be scientifically regulated.

If an Import Board is to protect the home producer to any appreciable extent, it must not only buy up foreign imports, but the home production as well, either directly or indirectly. This means in practice giving to the home producer a guaranteed price above the level of the world price of that commodity, if the Board is to confer substantial benefit. This subsidy must be paid for in the long run by raising the prices of foreign imported goods to the consumers.

In whatever way restrictions are placed on the freedom of international trade the effects in the long run are substantially the same, though these effects are more disguised under one form than another. Prices to the consumer are higher than they would otherwise have been.

That is not the only evil. The economic system becomes less flexible, and loses the power to adapt itself quickly to the changing conditions of a highly dynamic world.

33. The Distribution of Gold in International Trade under a World Gold Standard

In medieval times, a supply of bullion was essential to any State, for credit facilities were not then developed; in warfare, the side which obtained control over a large store of bullion had a great advantage; added to this was the conception, which has not yet disappeared, that money is the most important form of wealth, instead of a mere medium of exchange which gives control, to a limited extent, over goods which satisfy human wants more immediately. Thus nations attached great and often undue importance to the possession of large stores of precious metals.

There grew up a crude theory that it was advantageous to export goods and disadvantageous to import them; in the former case, money was attracted into the country, and in the latter, was sent abroad. Thus it seemed that bullion could be attracted to a country by restraining imports and stimulating exports. The theory of the Mercantilists was less crude: they were willing to allow the import of goods, if the final result was a net gain of gold to the country; they looked rather to the balance of trade, and were satisfied if exports exceeded imports, so that a balance of precious metals was due to the country. So, in more recent times, the apparent excess of imports into this country over exports from it has led some men to believe that (before the war) England was steadily getting into debt or else being drained of gold. To many men the loss of gold seemed to be a serious evil.

When it is remembered that gold is simply a commodity with a high exchange value, these fears lose their terrors: merchants attach no special value to bullion, except in times of financial crisis, for to them gold is no

more than an equal value of another commodity. Again, the attempts made by states to safeguard a huge store of bullion have usually failed. First, an attempt to stimulate exports permanently is successful only when imports are simultaneously encouraged, while the effective restraint of imports is found to discourage exports; when foreign trade is considered as barter, these results are to be expected. Next, a successful attempt to attract bullion sets forces in motion which tend to its re-export. A country might, with great difficulty and expense, build up a store of gold; it would have to be continually guarded, for it would be very profitable to export it.

Spain obtained much gold and silver from the newly discovered America, but could not keep it, for Spanish merchants found that it was profitable to buy foreign commodities. Prices rose in Spain, so that Spanish goods were dear, while foreign commodities were cheap; thus imports into Spain were encouraged, while exports were hampered. The excess of imports over exports (other than precious metals) was so great, that bullion had to be sent in part payment; if a Spaniard had to pay a debt, he could do it most effectively by sending gold, which he could obtain relatively cheaply, to a place where it was relatively much more valuable. Thus, in time, the discoveries of new precious metals were diffused throughout Europe.

By the action of the exchange brokers, the total world gold supply used to be distributed among different countries according to their needs; occasionally gold was too abundant, and prices rose; at other times, it would be scarce, and a crisis occur; on the whole, however, the distribution was well carried out. The way in which superabundant gold was exported has already been investigated; a contrary process allowed gold to flow into a country which had less than its proper share. Suppose the gold supply was abnormally low in England, compared

with other countries; prices would be lower in England than elsewhere (assuming that the amount of credit money was proportional to bullion); English goods would be relatively cheaper, while foreign goods would be dearer; imports would thus be checked and exports be stimulated; thus there would be more English exporters and fewer importers; there would be more English bills on foreign countries and fewer foreign bills on London; the latter would become dear, and finally the incoming gold point would be reached.

Ricardo argued that gold and silver having been chosen for the general medium of circulation, they are, by the competition of commerce, distributed in such proportions amongst the different countries of the world as to accommodate themselves to the natural traffic that would have taken place if no such metals existed and the trade between countries were purely a trade of barter.

As a general proposition this is true, but there are exceptions. Imports of gold are not always allowed to function as a means of raising prices. Another exception is where the force of custom maintains prices at a level lower than that which would exist under free competition. It would then be to the interest of other nations to send gold there to purchase goods, and so long as customary prices held at this low level, the amount of gold in the country would be far in excess of its needs.

34. London—The Great Gold Market

Before the war, London was the great market for gold from South Africa, etc., but this gold was not accumulated in London; London was the world's greatest free market for gold; if the gold had accumulated, prices would have risen, English goods would have become relatively dearer and foreign goods relatively cheaper; exports would have been discouraged, imports encouraged, the balance of trade would have turned against us, the gold point would have

been passed and the superfluous gold exported. If the State had tried to prevent the export of gold by laws designed to protect the store of bullion, some gold would have been smuggled away; so far as the laws were effective the only result would have been the presence of gold in the country in place of commodities which gave a real and immediate satisfaction.

When London was the free world market for gold, *i.e.* when it was the one place where gold could always be obtained on demand, it was naturally the most important centre for bill transactions.

A foreign merchant might find it impossible to obtain a bill drawn on the country to which he wished to remit money: an Argentine merchant wishing to pay a debt in Roumania would not be likely to obtain a bill drawn on the latter country, for there is little or no direct export of Argentine goods to it, so that there would be no bills on the Argentine accepted by a Roumanian firm. Accidental debts of this nature are common, and the difficulty is overcome by sending a bill drawn on a great financial centre. Such bills drawn on a third country are very commonly used in other cases also: even when bills are procurable on the country to which money is to be sent, it may happen that indirect bills are cheaper or more convenient. There is normally no permanent difference in price between a bill drawn direct on a country and one drawn on a third country, for when it is cheaper to send money indirectly, the competition for bills on the third country tends to equalise the expense of the different methods of remitting money: this process of equalisation by competition is called "arbitrage" of the exchanges.¹

In the above instance the Argentine debtor would easily obtain a bill drawn on London; this he would remit to Roumania, and the creditor in that country would easily

¹ Arbitrage also tends to smooth out fluctuations in the exchanges by spreading the demand for bills over a wider area.

get a London bill discounted. The same would apply in the case of an arbitrage operation; the existence of London as a financial centre makes it possible to equalise all exchange rates indirectly. In such cases, however, bills may be dispensed with: the growth of international credit and of financial houses has made it possible to remit money from country to country by means of book transfers.

The connexion between bill broking and the state of the Bank of England reserve used to be vital and important; to a less extent the same held good of all banks which guarded a national reserve, but the difficulties of the Bank were increased by the fact that London was the only place in the world where unlimited gold could be obtained. In Berlin, for example, obstacles were placed in the way of those who wished to obtain a large amount of bullion. Sometimes a bank bought gold in the market by sale of securities, but this did not provide a means of making a permanent increase in the reserve.

It should be noted that when the world is on a gold standard it is possible for certain countries to have an exchange that is permanently favourable with respect to some countries, and an exchange that is permanently unfavourable with respect to others. This only signifies, however, that such a country is a distributor of gold, receiving it from the mining countries on the one hand, and circulating it among other countries on the other. Ricardo pointed out that Spain, which was in his day a great importer of bullion from America, could never have an unfavourable exchange with her colonies; but, as she had to distribute the bullion she received amongst the nations of the world, she could seldom have a favourable exchange with the countries with which she traded.

Australia ships large quantities of gold to England; hence, when both countries are on the gold standard, the Australian exchange is usually favourable to us; bills in Sydney and Melbourne on London are usually at a premium.

It must be carefully noted, however, that in both these cases (apart from Australian payments of interest on loans) the gold exported from the mining countries is hardly money in the usual sense: it is really a product of the same type as any other raw material.

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APPENDIX

There is an ambiguity in the term surplus used in the chapters on distribution. Rent is defined as a surplus above costs of production and also as a marginal payment, but the following brief explanation should clear up any misunderstanding.

In any form of production it is easy to see that what Wieser calls cost-means, or non-specific factors, must be rewarded first; otherwise they would transfer themselves to alternative employments. Specific factors, therefore, take the residue or surplus.

To simplify the argument, let us suppose that the landlords cultivate the soil. Now in Ricardo's theory land was a specific factor. Its rent was surplus produce not due to human efforts directly; that is to say even when expressed as the hire price of land, it was not a payment, necessary to bring factors of production into work.

If we ignore differences in the fertility of the soil and suppose the land to be uniform in quality, rent will still appear as soon as the products of land are relatively scarce, for the demand price will rise above the costs of production. But is this rent a true surplus, or a payment that must be made to induce the landlords to continue a particular form of production?

Now the rent is a true surplus only on the assumption that the land is a specific factor; but if the land can be used for alternative purposes, it must be a necessary price which the consumers must pay to the landlords, otherwise they will turn their land to some other use. As soon as land becomes a non-specific factor, the apparent surplus turns out to be a necessary marginal payment.

If we now suppose land to be of different degrees of fertility, the argument remains unaffected. It is only

when a factor of production is purely specific that the least efficient unit is the true margin. If the factor is non-specific, the marginal unit is the one that will first leave the supply for some alternative use. But this may be a unit of land that is yielding a surplus on Ricardo's theory; it is clear, therefore, that as soon as land ceases to be a specific and becomes a non-specific factor, the apparent surplus turns out to be a marginal payment.

Now as we cannot foretell in advance which unit of land will leave a particular supply first, every unit in the supply can be treated as marginal, so that the sum of these payments exhausts the whole of land rent and no true surplus appears.

In Ricardo's days, most of the land of England was highly specific, being used mainly for corn production. To-day, however, most of English land may be rightly regarded as a non-specific productive factor.

Wieser's distinction is of great importance in the theory of distribution, but in these days of progress most factors acquire non-specific characteristics in the long run. Except in the short period, few of them are so highly specialised that they have no alternative employments.

Wieser regarded the entrepreneur as a specific factor and his profits as a true surplus, but this is not true in all cases. The marginal entrepreneur is not necessarily the least efficient—except where he has no alternative employment. If he has alternative employments, part of his apparent surplus profit may be a necessary payment to keep him in a particular supply—a price paid for progress. At the same time, entrepreneurs as a class may be more specific in character than units of land in England to-day.

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